# Archive

The Subscription Magazine for Acorn Users

JULY '94

July 1994 Vol. 7 N° 10 £2.00

## Risc PC – First Impressions

## Copyright Issues

## Colour Scanning Revisited

Bible Software for Acorn Computers

Relational Database Design – 3

Assembly Language Programming – 2

**Reviews:** 10 out of 10 Maths – Statistics, Advantage, CardShop, Carnage Inc, Cars – Maths in Motion, Celtic Designs, Church Year Clipart, Style Resource Disc, Larger, Lemmings 2, Materials Components & Techniques, Molecular Modelling Update, MouseTrap, Music Box, Observess, Optical OCR, Oxford Reading Tree Talking Stories, PenDown Etoiles, Phases à la Nouveau, Small Steps, Technical Clipart Collection, Cowboys & Indians, Wimp Programmer's Toolkit.

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NORWICH COMPUTER SERVICES

## How is Medusa now?

All that I have seen about the Medusa project (i.e. the Risc PC) has convinced me that Acorn have fundamentally changed their ways of doing things. They have certainly changed from the 'closed box' computer philosophy, they have become much more open with the media (especially the Acorn press) and they have gone some way to breaking their reputation for over-pricing.

The only major question mark for me is whether they have broken their habit of launching a new computer but then not having any machines to sell. The feeling I get is that they have done better than with the A5000 although there is still a certain amount of patience needed! There is a (small but) steady flow of machines – we are getting a few each week so that our back-order list is actually shrinking, albeit not as fast as we would like. (Unfortunately, we are getting rather more ACB15 and 25 models than ACB45s – which the majority of Archive subscribers actually want.)

Come on, Acorn. We're on your side. If there's some problem with ACB45s, tell us and I'm sure you'll find us very understanding. Not knowing what is going on, and why, is very frustrating for those who have been waiting (fairly) patiently for up to two months.

*Paul Beverley*

**Government Health Warning – Reading this could seriously affect your spiritual health.**

Do you suffer from "Black Cherry Yogurt" syndrome? When you buy a pack of mixed flavours of yogurts from Sainsburys or wherever, there's always *one* flavour that no-one in the household likes! Well, in our case, it's black cherry. We buy them because we like all the other flavours but what happens to the black cherry ones?

Until a few months ago, my wife, Sue, was always the one who ate the black cherry yogurts – and this, despite the fact that, as I well knew, she didn't really like them. (Mums are wonderful, aren't they?! I don't think they get sufficient recognition for their self-less service... but I digress!)

I began thinking about the black cherry yogurt syndrome when I was studying an excellent series of talks by Colin Urquhart entitled, "How to love and be loved". (Copies available f.o.c from NCS – just send an A5 S.A.E. marked "HTLABL".) I decided that if I really loved Sue, *I* would eat the black cherry yogurt – why should she always have to make the sacrifice? The funny thing is that I have now actually grown to like them!!

Yes, OK, maybe it's a silly example, but the idea of self-sacrifice in relationships is not a popular one these days, is it? There is much more talk about how I can be *self*-fulfilled within my relationship.

Actually, we *have* been made to think about the idea of self-sacrifice just recently with the anniversary of the D-Day landings in Normandy. We should surely never take for granted the way those thousands of servicemen laid down their lives so that we could be free – neither should we take for granted those who *didn't* die – wasn't their sacrifice, in many ways, just as great?

What does Jesus have to say about this? In John 15, verses 12 to 15, he says, "My command is this: Love each other as I have loved you. Greater love has no-one than this, that he lay down his life for his friends. You are my friends if you do what I command." And he didn't just *talk* about it, he actually laid down his life for us when he died on the cross. THAT is self-sacrifice.

(If you are thinking, "I can see how the D-Day sacrifice was, in some sense, for my benefit but how could the death of an itinerant preacher 2,000 years ago be of any benefit to me?" That's a very good question... but I've run out of space so you'd better ask someone who calls themself a Christian – if they don't know the answer, they jolly well ought to!) *P.B.*

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# Products Available

• **A5000 is no more** – Acorn have officially stated that the A5000 is no longer in production and that they have no stocks left. We have one left (2Mb/ 210Mb 33MHz) without monitor for £990.

• **Acorn mice galore** – We have now managed to buy a total of 250 Acorn mice at special prices and, "while stocks last" they are available to Archive subscribers at £20 each (normal price £40). This makes them cheaper than Clares' mice at £30 which aren't as reliable as the Logitech Acorn mice. Also, since replacement mouse cables are £11 (Digitech) and £13 (Logitech) it makes it hardly worthwhile re-tailing mice!

• **Around the World in 80 Days** is designed for upper primary school pupils and will introduce them to a range of geographical skills including grid references, longitude and time zones, latitude, contours, bearings etc, all presented within an adventure as wicked Wiley Windbag tries to thwart the efforts of the global travellers Freddie and Francis Fogg (Phileas Fogg's children?). Around the World in 80 Days costs £39.95 +VAT from Sherston software or £44 through Archive.

• **CDFS-FSCSI upgrade** – If you upgrade your Acorn SCSI card to CDFS 2.2 by buying the Acorn upgrade, you also now get a copy of PhotoView. This is an application that allows Kodak PhotoCDs to be viewed and used as a resource in other applications. The price has risen slightly to reflect the provision of the new software. It now costs £41 inclusive through Archive.

• **Graphics Loaders** – With the greater range of graphics available to the Acorn machines in different formats, Computer Concepts have released a disc of graphics loaders. These cover PhotoCD, JPEG, Clear and an enhanced TIFF loader. The Graphics Loaders disc costs £39 +VAT from Computer Concepts or £43 through Archive.

• **Impression Publisher** – This is now shipping from Computer Concepts although there is quite a backlog of orders. This new version of Impression provides a range of new features with the professional user in mind. Irregular shaped frames will be useful to many users and the range of controls for colour work will be particularly welcome and reinforce its position as the leading DTP package for Acorn machines. We hope to have a review shortly which will give details of the new facilities. Impression Publisher costs £169 +VAT or £180 through Archive.

• **James Pond2+** – James Pond 2 has had almost 500 new screens and new tunes added to become James Pond 2+ ! You can upgrade from Gamesware for £7.99 if you send them proof of purchase. The normal retail price remains at £25.99 or £24 through Archive.

• **Keystroke version 3** – This new version offers much more compatibility with CC's products,

## Archive Monthly Program Disc Contents

• Files for Schema 2 from Aneurin Griffiths. They print out "Hotkeys", "Cursor Keys" and a "Keystrip".

• Programs from James Riden's article on assembly language programming.

• Printer test program from Paul Hobbs' Advanced Basic Column.

• Files from Paul Hooper's Multimedia Column.

• Glossary, latest version – I've decided not to print the glossary just yet because it is already 13 pages long (7,400 words) and is still growing. If I put it on the program disc every so often in Impression and Edit format, will that be OK? Or would people like a printed version? If so, once it has settled down and stopped growing, I could use, say, the middle four pages of the magazine, four months running. Tell me what you think and keep feeding me words and acronyms that you want defining.

provides a slow demonstration mode and "numerous extras that have been added at customers' request". Also, it is fully Risc PC-compatible. The upgrade costs £4.95 inclusive from Quantum Software.

• **Logix** is a suite of applications from Silicon Vision, allowing students to design and simulate logic circuits. Features include multiple tailored libraries, fully hierarchical operation, custom design of circuits and casings, built-in LEDs and displays for feedback, switches and push buttons for logic input, drawfile saving of circuits and simulations. Logix costs £99.95 +VAT (or £109 through Archive) and a site licence for twenty machines is £300 +VAT from Silicon Vision.

• **Magnetoids** – Oregan Developments' latest game is a 3D space battle game. It features variable light sourced vector graphics, Acorn and RTFM joystick support, enhanced ARM 3 mode and hard disc installation. Magnetoids costs £24.95 from Oregan Developments or £23 through Archive.

• **Morley SCSI upgrade** – There is now an upgrade for the Morley 16-bit SCSI cards to make it compatible with Risc PC and also to provide the latest CDFS and a PhotoCD viewing application. The other improvement is in the formatting / partitioning / installation software which is now easier to use and has password protection to prevent unauthorised formatting or alteration of the SCSI configuration. The upgrade is only available from Morley Electronics and costs £35 inclusive.

• **Ovation price drop and special offer** – There is no sign yet of an Ovation 2 but Ovation 1 is being given a sales boost. The price has been dropped to £69 +p&p +VAT (£67 through Archive) and if you buy it before the end of August, you will get free copies of Desktop Thesaurus and a book called "Getting into Ovation".

• **Photo-retouch software** – This month sees the release of two more photo-retouch packages for the Acorn machines. They are **PhotoTouch** at £79.95 inclusive from Oregan or £75 through Archive and Digital Arts' **Picture** at £99 +VAT or £108 through Archive. We hope soon to have comparative reviews of these two packages with Photodesk from Spacetech, which costs £185 through Archive.

• **ProArtisan 2 CD** – Clares have updated ProArtisan so that it will handle PhotoCD images and have made the whole thing available on a CD for £169.95 or £158 through Archive. You can upgrade from ProArtisan 2 direct from Clares Micros for £29.95 inclusive.

• **Professional full colour scanning service** – T-J Reproductions, who provide a full Acorn disc-to-print bureau facility, now have full colour drum scanning facilities. Existing users of T-J's image-setting and litho printing services can take advantage of this complimentary service of scanning images at up to 5,000 dpi in four colour format – presumably using SyQuest removable hard discs to transfer the massive files produced!

• **Psion3a** – We are now stocking the Psion3a Personal Organisers. The 256Kb version is £269 and the 512Kb version is £329.

• **Rephorm update** – Oak Solutions have updated Rephorm for the Risc PC, providing support for 15-bit and 24-bit sprites. They have also introduced a number of other improvements including OLE support, Clear file conversion and swap start and end frames. The price remains at £50 +VAT from Oak Solutions or £55 through Archive and an upgrade path is available – just send your master disc plus £15 +VAT to Oak Solutions for the latest version.

• **Repro** – Oak Solutions' printer driver control utility was described last month on page 7 but, unfortunately, we forgot to mention the price! It costs £50 +VAT from Oak Solutions or £55 through Archive.

• **RISC OS 3 Style Guide** – This is now available from stock through Archive for £10 inclusive.

• **Risc PC with no monitor** – Acorn have announced a "no-monitor" option for the Risc PC. If we supply a monitor-less computer to an "enthusiast", Acorn will allow us to supply it at £250 +VAT off the normal price. So if you want to order a Risc PC without a monitor, just deduct £294 off the basic price. This offer only applies to individual Acorn "enthusiasts" (but you don't have to wear an anorak to prove it) and not to schools, colleges or businesses, presumably. (Mind you, we

haven't yet had the official conditions of this offer from Acorn yet.)

• **Risc PC VRAM price drop** – We have managed to reduce the Risc PC VRAM prices: 1Mb is now £130, 2Mb is £200 but the 1–2Mb upgrade is still £110.

• **Risc PC SIMM price drop** – With increasing volume of sales, we have been able to get better pricing for the Risc PC SIMM memory as follows:

4Mb SIMM: £150 → £145
8Mb SIMM: £300 → £265
16Mb SIMM: £640 → £590
32Mb SIMM: £1350 → £1225

• **Speedball II** – Take control of Brutal Deluxe, the worst team in Speedball history, and turn them into champions. You can play a knock-out competition against progressively tougher teams and there is a Cup option played over four two-leg rounds but the main challenge is in the full league. Brutal Deluxe begins in division two with their aim being to achieve promotion and then win the title. You can choose to manage the team, buy and sell players and let the computer handle events on the pitch. Speedball II costs £25.99 from Krisalis or £24 through Archive.

• **Stunt Racer Extra Tracks** – For all you keen Stunt Racers, here is a compilation of new tracks and scenery to keep you playing for many happy hours! Stunt Racer Extra Tracks costs £19.95 from 4th Dimension or £19 through Archive.

• **Top quality fonts** at less than 60p per font? LOOKsystems are doing a special summer promotion so that we can sell their 100 Monotype Fonts pack (full price £95) for just £59.

• **Toshiba CD-ROM driver** – If you want to run Toshiba CD-ROMs in multisession mode, e.g. with PhotoCD, you will need a special driver. This is available as part of the SCSI upgrade for Morley 16-bit SCSI interfaces (see above) but is also available as a separate soft-loadable driver for use with other SCSI cards. This costs £25 inc VAT from Morley.

• **WimpGEN** – This is a new application-authoring package which allows an application's user interface to be built up, allowing you to concentrate on the main application code rather than the interface. The whole process of creating windows, dialogue boxes and menu structures can be done interactively. The price is £99.95 inc VAT from Silicon Vision or £93 through Archive.

• **World Development Database** – CWDE Software are releasing a version of its World Development Database in general format (as well as in existing Key Plus and Grass database formats) thus making it possible to use the data with whatever database you already use. The information provides social and economic statistics on 129 countries in CSV and text format. This costs £35 +VAT from CWDE Software.

**Review software received...**

We have received review copies of the following: •Beethoven Browser Egmont (e), •Conjugez (e), •Equate (e), •GridPro (eu), •ProArtisan 2 CD (a), •Schema 2 (b), •Switch (u).

e=Education, b=Business, u=Utility, a=Art.

*If you would like to review any of these products, please contact the Archive office. Potential reviewers will need to show that they would use the product in a professional capacity or that they have some knowledge of the particular field.* A

# Small Ads

*(Small ads for* **Archimedes** *and related products are free for subscribers but we reserve the right to publish all, part or none of the material you send, as we think fit. i.e. some people don't know what 'small' means and there are certain things, as you can imagine, that we would not be prepared to advertise as a matter of principle. Sending small ads (especially long ones!) on disc is helpful but not essential. Ed)*

• **128Kb RAM SSD** with backup battery for Pocket Book or Psion 3/3a, £35 inc postage. Will fill with PD games and software for an extra £5. Also Psion Games Pack 1, will work on Pocket Book, £20, or £50 for the lot. Phone 0788-521189 after 6pm.

• **20Mb ST506** hard disc with backplane, fan and podule £100. I/O podule £30, CC ROM/RAM podule

with 96Kb RAM £25. MIDI/user port (A3000) £20. 1Mb for A3000 £15. Minerva Business Accounts £55. Flexfile £15. ANSI-C v3 £25. Ovation £60. System Delta+ £15, ABC Compiler v2 £25. Investigator II £12. OS2 PRMs £30. Details from Alan 051-606-0289.

• **A3000 LC**, 4Mb RAM, ARM3, RISC OS 3.1, 43Mb IDE HD in PRES housing with PSU, BBC B compatible with 5¼" disc buffer & DFS filer, good software, manuals etc £733 (cost £1800). Colour Card Gold for A3000/A5000 £185. PRES double podule expansion for A3000 £50. PC Emulator v1.8 with DR DOS £55. Phone 0602-605718.

• **A3000** 2Mb, 60Mb IDE HD, RISC OS 3.10, Philips CM8833 monitor, Panasonic KXP1123 Printer, Colton Wordz, SimCity, much PD) £675. A5000 2-4Mb upgrade £55. Unregistered software: Revelation Image-Pro £75, PinPoint £45, Notate £50. All serious offers considered. Ring Moray on Reading (0734) 572020.

• **A310**, 1Mb, two slot backplane, green monitor, Genesis, Acorn DTP, 1stWord Plus. Offers? Ian 0734-661431.

• **A310 2Mb**, RISC OS 3.1, 5¼" external drive, colour monitor, £200. Phone 081-986-4442.

• **A310**, ARM3, 4Mb, twin disc drives, 45Mb external SCSI hard disc, 4-slot IFEL backplane, colour monitor, Qume LaserDirect printer, PC Emulator software, £900. Phone 081-715 5523 after 7pm.

• **A310**, ARM3, RISC OS 3.1, 4Mb RAM, 40Mb IDE hard disc (latest ICS interface), colour monitor, fan quietener, some software, plus PD software, Beebug 5¼" disc interface, +40 track drive, DFS reader software and 50 discs. The lot for only £600 o.n.o. +p&p (offers considered). Phone Derby 0332 557751 (eves).

• **A410/1, OS3.1**, 4Mb RAM, 170Mb IDE hard disc, ARM3, video enhancer and Eizo 9060 multiscan colour monitor. £950. Phone 0772-634492 evenings.

• **A420/1 4Mb**, 40Mb HD, 200Mb external SCSI HD, ARM3, RISC OS 3.10, Taxan 775 multisync monitor, G16 Graphics card, Hawk V9 Digitiser, Sound sampler, Midi interface, ArtWorks, Style, PRM's etc. £700 o.n.o. Phone 0277-657147

• **A440, ARM3** (30MHz), 200Mb HD, RISC OS 3, PCATS Graphics enhancer £500. Taxan 770+ multisync £125. External Syquest removable hard drive (+SCSI) + 4x84Mb discs only £300. Phone 0646-681186.

• **A440** with hi-res col monitor, ARM3, RISC OS 3.1, 20Mb HD, VIDC enhancer, CC RAM/ROM podule and Acorn I/O podule £550 o.n.o. Phone Doug on Sunbury 0932-783252, 5-8pm.

• **A5000 25MHz**, RISC OS 3.11, 4Mb RAM (upgradable), PC Emulator v1.81 with DR DOS 5.0, Acorn m/sync monitor, boxes, manuals. Excel. cond., £850. Available after Risc PC arrives. Phone 0276-22031.

• **A5000 40Mb/2Mb**, AKF18 colour monitor, RISC OS 3.1 1stWord+, DTP, PC Emulator, Genesis, Lemmings, Pacmania. All originals with documentation. £950 o.v.n.o. Phone Alan Spencer on 0272-316561 (day) or 0275-844388 (evenings or weekend).

• **A5000 4Mb**, 80Mb HD, Taxan m/sync monitor, Prism 1000 modem. £1050 o.n.o. Phone 0625-429363.

• **A5000, RISC OS 3.1**, 4Mb 100Mb HD, PC Emulator, DTP and software, excel. cond. £750. I/O podule £60, Acorn MIDI Podule £50, Master 128 £150, 100Mb external SCSI drive £200, Oak SCSI podule +CDFS £100 or with drive £250. 250 Mb 3½" bare IDE drive £250. Toshiba 3401 external SCSI CD-ROM drive £450. Phone 0602-272282 after 6pm.

• **A540 (4Mb RAM**, 100Mb SCSI HD), Eizo 9060 multiscan, PC Emulator, Multistore, £800. SyQuest 84Mb SCSI removable HD inc. cartridge, £350. E-TEC P9624 Fax Modem, £100. Phone Robin on 0663-741419, 6am-3pm Mon-Fri.

• **Acorn A5000, 33MHz**, 8Mb RAM, 160Mb HD, m/sync monitor, six month guarantee, software (lots), books, boxed. Offers? Phone Ian on 0734-661431.

• **Acorn A5000 Learning Curve**, 25MHz, 4Mb RAM, 120Mb hard disc. Excellent condition £700. State Machine ColourBurst Graphics card for A5000 £290. All with packaging and manuals. Contact G. Rhodes on 0302-722781 evenings.

• **Acorn DTP** £35, MS-DOS 5 £30, GammaPlot (v2) £15, SystemDelta+ (v2) £25, Investigator 2 £10. Boogie Buggie, Superior Golf, Zarch £6 each, Startrader, Word Up Word Down £3 each or all five for £20. ARM Assembly Language Programming £8, MS-DOS Quick Reference £5, RISC OS 2 PRM £35. Phone 0737-832159 (evenings).

• **Archimedes/Acorn games** for sale. Low prices. Games sold separately. Send SAE for list to Daniel Peppett, 28 Dene Road, Northwood, Middx, HA6 2BT.

• **Archimedes products.** Impression II, PC Emulator, Books: upgradable RO2 PRMs, A3000 TRM, Basic, OS programming, Assembler programming. Offers? Ian 0734-661431.

• **Citizen Swift** 24 dot matrix 24 pin printer, £100 o.n.o. Phone 081-898-0447.

• **Citizen Swift** 24-pin colour, excellent output. New print head last year. Complete with manuals, printer drivers, all leads, 2 black and 2 colour ribbons. Cost over £375, accept £125 (+carriage) o.n.o. Phone Nigel Caplan on 0532-675673.

• **Computer Concepts Colour Card** Gold £140. Phone 06977-46786.

• **Computer Concepts Fax Pack** £300 o.n.o. Pace Linnet 1200+ V21/22/23 modem, £50 o.n.o. All with full documentation. Phone 081-789-2663.

• **Conner external 125Mb** SCSI hard drive, £140. Serial Port, Econet SCSI adaptor, 2m cable, £30. All incl. p&p. Phone Mark after 6pm on 0905-754277.

• **EasiWord** £20 o.n.o., Grievous Bodily 'Arm £10, Blowpipe £10, Enter the Realm £10, Blitz £10, Cataclysm £10, Quickshot Maverick Joystick £10, Quickshot Python 3 Joystick £5. Acorn A5000 4Mb RAM, 120Mb hard disc, Acorn M/sync monitor, RISC OS 3.1, 1yr old, excellent condition, £1200. All sensible offers considered. All prices +p&p. Contact Jon Aylwin, 4 St Margarets Close, Hemyock, Devon, EX15 3XJ.

• **EasiWriter** v3.5, with manual and version 3 supplement £85. Phone 0383-739629.

• **Pineapple** 16 bit colour digitiser in external case, v.g.c. with software and manuals. Works on all pre-Risc PC machines, £115 (inc p&p). Phone Mark after 6pm on 0905-754277.

• **Real McCoy 2** £12, Chess 3D £7, 1st Word+ 2 £8, Genesis (rel.1) £5, Ballarena £5, Boogie Buggy £5, Grievous Bodily 'Arm £4, Drop Ship £4, Man at Arms £4, UIM £4, Powerband £5 or all for £53 +p&p. Offers considered. All original discs. Phone Neil on 0522-685295.

• **Rhapsody 2**, £35. Casio CZ3000 full size, multitimbral synthesiser with midi leads, all manuals, boxed, v.g.c. £150 (will reduce if collected). Armadeus with Armadillo sound card, £65. Phone Mark after 6pm on 0905-754277.

• **Roland DXY1200** A3 plotter + Drawplot. As new, hardly used. £525. Also Multistore II £25, Imagery £15, Phone 081-864-4805.

• **Roland DXY-880A** A3 pen plotter £250, Roland Camm2 PNC-2100 engraver with Techsoft Designer V3 software £1600. System Delta+ £20, Archway 2 with Mahjong £30, Autosketch £20. Phone 0986-872465.

• **Sleuth OCR** £40, Impression Style £80, Artworks v1.5, £100, Impression v2.19 (upgradable to publisher) £85, ARCterm7 £50, High performance dual serial card £70, S-Base Developer £150, Acorn Desktop C rel. 4 £110, Archimedes Disc Rescue £20, RISC OS 3 PRMs £80, ARCbbs £85. All negotiable but add p&p. Phone 0633-894533.

• **Taxan Viking II** 17in hi-res mono monitor, together with R140 (like A440), ARM3, 63Mb ST506, Impression II and ArtWorks. Ideal system for serious DTP. Also Microvitec Cub colour monitor for games, V21/V23 modem for comms and KX-P1124 printer for drafts. Other s/w inc Compression, PC Emulator, ABC Compiler, Archway, Chocks Away, E-Type, etc. Also RISCiX licence. The lot for only £700 ono, or will separate. Phone Alan Robertson 071-607-0700.

• **Wanted**: A-Link for the Psion 3. Phone Derby 0332-557751.

• **Wanted**: Notate or Rhapsody. Contact Colin 0786-461501 (Stirling).

• **Z88, 128Kb RAM pack**, 128Kb and 32Kb EPROMs, EPROM eraser, parallel lead, soft case, hard top, mains adaptor, Arc lead, boxed with manuals. £80. Phone 0705-819125 Ext. 223 (day), 0705-830429 (evening).

# Charity Sales

*The following items are available for sale in aid of charity. PLEASE do not just send money – ring us on 0603-766592 to check if the items are still available. Thank you.*

**Software**: First Word Plus £9, Acorn DTP £8, DR-DOS5 £5, Impression Junior £20, Genesis £5, Genesis Plus £20, PC Emulator 1.7 £20, Twin £8, 3D Construction Kit (RISC OS 2 & 3.00 only) £5,

Oh No More Lemmings £10, Pacmania £5, Leading Edge Midi Tracker £15, Chocks Away £8, Bubble Fair £2, Quest for Gold £2. Also, new, unregistered (unwanted competition prize!) Font Directory £28 (full price £35).

**Hardware**: Faxpack £185, 40Mb IDE drive £50, 40Mb ST506 drive £40, A3000 1Mb RAM £30, Cumana 40/80 external 5¼" floppy drive £40, WE external disc interface (for A400/1 and earlier) £15, 2-way backplane for A310 £30,

*(If you have unwanted software or hardware for Archimedes computers thatyou could donate in aid of charity, please send it to the Archive office. If you have larger items where post would be expensive, just send us details of the item(s) and how the purchaser can get hold of them.)* A

# Hardware Column

## Brian Cowan

I am afraid that this hardware column will not be discussing matters relating to the new Risc PC in any detail for some time, because I don't think I will be able to find the cash to buy one in the near future. Instead, I will tell you about a new piece of hardware that I have, and with which I am *very* impressed. But first an apology for an error in last month's column.

### Correction

I misled readers last month about the difference between the 486SX and 486DX chip. In the case of the 386 chips, neither the DX nor the SX has a maths coprocessor. Internally, both chips are the same, but externally, while the 386DX has the full 32-bit data bus, the SX version only has a 16-bit bus. Things are different, however, with the 486 family. Here *both* have the full 32-bit data bus. The difference is that the DX has a maths coprocessor built in while the SX does not have one. My assertion that the 486SX chip has only a 16-bit external bus was an unfortunate slip of the brain.

### PC processors for Risc PC

It has been well-publicised that Risc PC owners will be able to purchase a PC processor card for £99. This will have a 486SX CPU, probably running at 33MHz. This is, realistically speaking, the absolute minimum performance acceptable for a PC and it is being marketed at a rock-bottom price, considering that DR DOS 6 will be bundled with the card.

It is likely, however, that there will also be higher-performance PC processor cards available, produced by the PC card experts, Aleph One. My personal opinion is that Pentium coprocessors will be unlikely as those chips have a tendency to draw a lot of current, overheat and self-destruct. There are already clock-quadrupled 486 chips running at 100MHz, and a DX version as a PC second processor seems very likely. With the Risc PC's IOMD chip providing high speed access to RAM, discs etc, and the ARM and VIDC20 acting as a video coprocessor for the PC, the performance should be stunning, particularly using the new version of the Windows driver under development.

### High performance PC card (podule)

Now to my latest piece of hardware. This is the new high performance PC card from Aleph One. There are two problems with the Archimedes podule bus. Firstly, it is only 16 bits wide and, secondly, it is relatively slow. The first point means that there is not a lot of sense in using a CPU with anything larger than a 16-bit external bus. This rules out the regular 486 chips but there is a 486SLC CPU produced by Cyrix. This has a 16-bit external data bus, and is a sort of souped-up 386SX but with an internal cache, like the 486, and a full implementation of the 486 instruction set. So, when combined with a 387SX maths coprocessor, it is rather like a 486DX. The new PC card uses one of these Cyrix chips, running at a clock-doubled 50MHz. So this gives quite impressive performance.

With the old PC card, the podule bus provided a speed bottleneck for hard disc access. This was particularly important in Windows applications where virtual memory is implemented as a swap file on the hard disc. I had campaigned for a PC card with its own hard disc, and now we have it. When the new card is connected directly to a dedicated IDE drive, the performance is absolutely superb.

However, the down-side, is that such discs cannot be accessed from RISC OS. It is worth mentioning that, as well as also supporting the old system of PC partitions on RISC OS drives, it is also possible to access, through the podule bus, a dedicated SCSI drive connected to the Archimedes. This is actually possible with the older cards but setting up the configuration options for all these types of hard disc is now very easy with the Config application.

A further advantage of the new cards is that they will support up to 16Mb RAM. The old cards had a maximum of 4Mb, which was rather restricting when running Windows applications. I have 8Mb on my card and it certainly makes all the difference. I can now run Mathematica and other memory-hungry programs with ease, without lots of virtual memory "disc thrashing".

One could argue that 8Mb is a lot of RAM to have lying around. It would be nice to be able to use this from the RISC OS side. At the very least, one should be able to use the PC card's RAM as a RISC OS RAM disc when the PC card is not running. Come on someone, this would be a really neat piece of programming.

Another point worth considering is that, if an IDE bus is available on the card, it should be fairly straightforward to convert it to a standard PC ISA backplane.

There are some other interfacing facilities on the card such as an optional high speed serial port. I will report on these when I have tried them.

**Upgrading old PC cards**

Unfortunately, it is not possible to install the IDE bus on the old cards, nor can they be upgraded to more than 8Mb of RAM. However, one can have the CPU changed to the 50MHz 486SLC. Details of this were announced in last month's Archive. This is an option well worth considering.

**Some practical matters**

There is only limited space inside an Archimedes case, unless one is fortunate enough to have one of Ray Maidstone's tower cases. However, hard disc drives have been getting smaller and smaller in physical size while increasing in storage capacity. You can stack two new drives in what was the space of one older one. In this way, I have been able to install a 350Mb SCSI drive for RISC OS together with a 350Mb IDE drive for the PC card. I drilled some new holes in the old Archimedes hard disc cradle to mount the drives, together with some ventilation holes between the two drives. Everything went together beautifully.

Both hard drives have connectors for "busy" LEDs. I discovered that two small round LEDs could be squeezed into the rectangular hole of the old hard drive LED on the fascia, so I did not need to make any new holes. Before pushing the LEDs in, I filled the hole with clear silicone grease for better light transmission.

Much to my surprise, when I turned the computer on, the LED of the PC card's IDE drive remained lit. However, it eventually went out once the PC card application was running. It was worrying that the hard disc seemed to be accessed constantly. I queried this with Aleph One, and was reassured that no harm was being done to the drive. The disc was not being accessed – it was just that when the PC is not operational, it can't turn the LED out. Incidentally, there is a connector on the card to light a hard disc access LED but the same thing happens if you use that.

Finally, watch out that the memory board is installed securely to the PC card. At one stage, my PC card stopped working and I discovered that the memory card had fallen out! The PC card PCB is quite densely populated and there is a jumper link quite close to the memory socket which can make "clicking" the memory card into place a little tricky; but with care it can be done. **A**

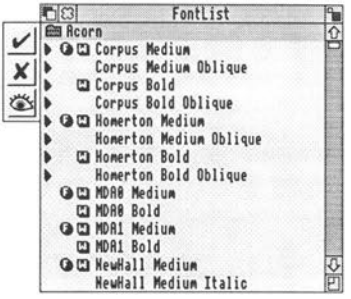
*(Talking of the new Aleph One 50MHz PC expansion cards, I'd like to give a warning to Risc PC owners. We put a 50MHz card in a Risc PC and, after a few hours of use, it seems to have done an auto-self-destruct! We're not certain yet what caused its demise but we suspect it may be because it was in the top slot on an ACB45 two-slice machine – i.e. furthest from the fan – and overheated. The other factor, we think, was direct sunlight on the lid of the case. Our advice would be that, until you get your Acorn PC co-processor, put your PC card in the bottom expansion slot and close the blinds! Ed.)*

LOOK systems

# Font Directory

## A font filing system

Hundreds of outline fonts are now available for the Archimedes and new fonts are being produced all the time. This is all very well, but it does mean that using and managing fonts is becoming increasingly difficult.




### What is Font Directory?

Font Directory is a radical approach to storing and using outline fonts within the RISC OS desktop. At its heart is a dedicated font filing system which provides the user with an unparalleled level of control.*

### Easy-to-use

Using techniques pioneered by LOOKsystems, Font Directory allows you to install fonts at the click of a button without the having to restart your application.

Just select the fonts in the FontList window and click on the 'tick' icon.

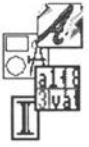
(If you wish, you can specify which fonts will be available on start-up and save favourite lists of fonts for later use.)

### Font viewer

A preview window is available to help you decide which fonts you wish to install or just to remind you what a particular font looks like. If required, the text, size and colours used to display a font can be defined and even saved for later use.

### Document scanning

The most powerful feature, however, has to be the ability to scan other applications' documents. When a document is dropped onto Font Directory, the fonts used will be made instantly available.



At last, no more 'font not found' errors!

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** This offer only applies to UK residents and expires 30th September 1994. Vouchers cannot be used in conjunction with any other offer or discount scheme and must be redeemed directly from LOOKsystems before 31st October 1994.

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Until September we're doing a very special offer for Fireworkz. For the summer period we've reduced the price from £149 to £99. You can buy a secondary licence for £396 instead of £596.

**Fireworkz**

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**Fireworkz for Windows** will be available in July at the special price of £99. If you already have the RISC OS version you can add the Windows version for just £50. If you have Acorns and PCs you can now work on your files on either computer - you can even use the same floppy disc. Fireworkz has the same user interface and menu structure whichever platform it is running on. If you're thinking of buying a RISC PC and want true cross platform compatibility and integration -
Fireworkz is the *only* choice!

**Recordz and Fireworkz Pro**

Fireworkz Pro is coming later this year. This incorporates Recordz - the next major piece in the jigsaw. It's a fast and friendly database, with card layout, searching and sorting. Recordz uses Datapower format files amongst others, shares Fireworkz wonderful user interface and can, as you would expect, exchange data with the spreadsheet.

**Classcardz**

In conjunction with Bretton Woods school we've been developing teaching cards for Wordz and Resultz which are now available. For £20 per set you get a collection of A4 laminated cards which you can photocopy. These take you through the first steps with Wordz and Resultz - creating and editing documents in a wordprocessor and spreadsheet.

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# Relational Database Design – Part 3

**Keith Underdown**

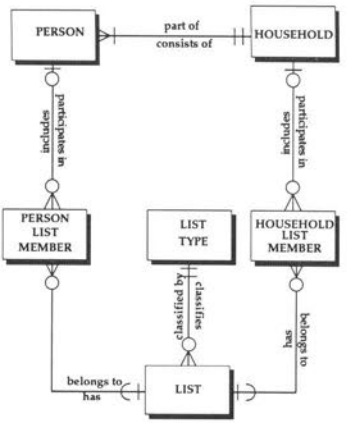
I must apologise for the break in the series. I understand from Paul there have been several enquiries about it, which is very gratifying! There were various reasons for the lack of articles but the main one was that I was not at all happy with the way that the model was turning out and I felt I needed to work on something more practical. This is a common dilemma in data modelling, where there is an attractive theoretical model but the real world does not fit!

I have also had one letter – from a fellow professional, Ian Stafford from Blythe in Northumberland. Ian makes the point that there is a way of representing mutual exclusivity in Entity-Relationship diagrams (ERD). In my first article, I said that I did not know of a convention for this. In fact, I came across the same method just before I received Ian's letter. It is probably worth saying that there are various different styles of ERD's, and I use the one that has been adopted by the modelling tool I use at work. The new convention comes from a methodology known as SSADM (Structured Systems Analysis and Design Method). In this method an arc is used instead of a straight line for the Optionality indicator on the mutually exclusive relationships. If the lines can be made to touch the entity close together, a single arc can be used across both. If there are more than two sets of mutually exclusive relationships and multiple arcs are needed, the members of each set can be labelled with a number to avoid ambiguity. I have adopted the new convention in the current version of our ERD below. (This is probably the only advantage of not having suitable design tools on the Archimedes – we can evolve our conventions.)

A reminder of the terms used in data modelling and some of the key concepts are described in the box at the end of the article. So far, we have looked at the identification of the important things – entities – in a model, how relationships are defined between them and how we can keep the model simple and theoretically correct by breaking a many-to-many relationship into two one-to-many relationships by finding the linking entity.

### The next step

Our data model currently looks like this:




We have fully defined four of our entities and we will try to define the two most important this month – PERSON and HOUSEHOLD.

### Defining PERSON

What do we need to know about a PERSON? We need their Forename, at least. We have to make a decision about what we do about multiple names. Strictly speaking, to avoid any restrictions about the number of names that our database will allow anybody to have, we ought to define FORENAME as a separate entity along with a FORENAME USAGE entity like this:

This is probably a bit over the top, unless we were researching the popularity of names in some depth. Instead, I propose we cheat! We need to know the name by which the person likes to be known as one attribute. We probably do not need to know about the rest of somebody's names, although we may need to record additional initials.

We can do this using a variable length string. We need to impose a limit on the length of Forename; 32 seems to be a value used a lot by systems. I cannot think of an English Forename that is this long

but it may not be long enough for the names used in some cultures.

This illustrates the fact that, while there may be a theoretically correct model, it is not always necessary or desirable to implement it. However, the bigger and more important a database is, the less such compromises are likely. I would guess that the Inland Revenue's database is more like the model above! Indeed, it probably has lots of information about the aliases that people use.

For the moment we will assume that all members of a HOUSEHOLD use the same surname, so that will be an attribute of HOUSEHOLD.

We also have to decide on what we are going to have as a PERSON's Unique Identifier. This is a very vexed subject in the real world as it touches on issues like a National Identity Card and the government's ability to keep tabs on individuals. In our microcosm, I suggest we simply use SQuirreL's ability to generate a serial number by default to give arbitrary IDs for each PERSON.

We now need to implement the relationship between a PERSON and the HOUSEHOLD to which they belong. This means that PERSON needs to have an attribute corresponding to the Unique ID for HOUSEHOLD. There does not seem to be a natural key for HOUSEHOLD, so an integer field will suffice.

We also need to know the title by which each person should be addressed. This is another classifying entity. As there is a relatively small and well-defined set (in UK usage, anyway), we can probably just define this as a validation list. It would be better to define it as a table, as this would give us the ability to define not just the title as it appears on the envelope but also the form in which it should be used in the salutation in a letter or when speaking to such a person. I will stick to the simpler method as it will probably suffice for us, but I know that my company's database includes the latter information.

PERSON thus becomes:

**Person ID:** An arbitrary identifier.

**Field Type:** Integer (serial, unique, mandatory).

**Forename:** The name by which the PERSON likes to be known.

**Field Type:** String (length 32, mandatory).

**Title:** The title (Mr, Miss, Mrs, Dr., Rev., etc.) that applies to the PERSON.

**Field Type:** String (length 12, mandatory, value from list).

**Other Initials:** The other initials for the person.

**Household ID:** The Unique ID of the HOUSEHOLD to which the PERSON belongs.

**Field type:** Integer, mandatory.

### Defining HOUSEHOLD

What do we need to know about HOUSEHOLD? We have already decided that its Unique ID will be an arbitrary integer. We also need to have the Surname, the full address (including postcode) and a phone number. We also need some way of handling the fact that the members of the HOUSEHOLD might have different surnames, will have different phone numbers at work, may have a mobile phone or a fax or even an e-mail address!

An iterative approach is a good way to make progress. We can define the bits we understand and leave the rest vague, for the moment. This is analogous to the well-known coding trick of deferring the solution of a difficult problem by calling a procedure within the program, before we know how the procedure will work.

So a simplified view of HOUSEHOLD would be:

**Household ID:** An arbitrary identifier.

**Field Type:** Integer (serial, unique).

**Surname:** A fixed length string giving the surname used by the members of the HOUSEHOLD.

**Field Type:** String (32 characters, indexed, mandatory).

**Address:** The Postal Address including Postcode.

**Telephone Number:** We need to decide how we handle dialling codes, especially in the light of Phone Day 1995.

### Why was I having a problem?

The problem is that postal addresses and geographical addresses are similar and, for a long time, the Post Office was able to manage by using geographic addresses. Each village or area had its Post Office and the letters were sorted there by hand by someone who knew the area well – like Mrs Goggins and Postman Pat!

As towns grew in size and the number of letters increased, this simple system could no longer cope. The Post Office needed to become more efficient, so they started to define addresses that were more aligned to their needs rather than accurate from a geographical or political viewpoint. Alsager, where I used to live, has a postal address of Stoke-on-Trent, because that is where its mail is sorted, but it is actually in Cheshire and shares a telephone dialling code with Crewe.

This was taken a stage further with the introduction of postcodes. These are structured in such a way that each postcode applies to a group of about fifteen houses for domestic premises and a business would tend to have a postcode of its own. This is described in some detail in your Thompson Directory at the start of the white pages at the back.

I knew that a combination of house number, postcode and first letter of the street is guaranteed to be unique to the house. For example, a letter addressed to "619, PR8 3NG, L" should have no difficulty in reaching me. The use of postcodes to organise the data model seemed to offer a way forward and I tried it when writing the first draft of this article. However, the Post Office uses postcodes to organise the way in which their delivery service operates. This is not necessarily closely aligned to geographical boundaries. I tried the assumption that PR8 3 postcodes would cover Ainsdale and only Ainsdale but was not convinced this would always be true.

As Paul was well supplied with other material, I chickened out altogether for a couple of months and as this article is already pretty long and the deadline is upon me I am going to chicken out of a solution again and leave things here until next month. A

**The Theory**

In the first two parts of this series we have explored and hopefully understood, the key concept in a relational database – the way in which relationships are implemented. This requires that every entity has an attribute that uniquely differentiates each instance of that entity from every other instance of the entity. This is its Unique Identifier or Primary Key. A relationship is indicated when another entity has an attribute that matches the Unique Identifier from the other table. This "foreign" key will always be contained at the "many" end of a "0-to-M" or "1-to-M" relationship. We have also seen how to resolve a many-to-many relationship by creating a linking entity with a M-to-1 relationship to each of the original entities.

# Carnage Inc.

## Gabriel Swords

Carnage is the kind of game you'll either love or hate. Me? I hate it – but that's only because I couldn't do it. I got two thirds of the way through level 1 and had to ask The Fourth Dimension for help. So, does this mean it's too hard for the average games player? Probably not. What it does mean is that it's too hard for an impatient games reviewer! However, if you like to think before you blast then this is a very enjoyable game.

### The scenario

It's the year 2297. The Earth council has abolished all weapons, and earth is at peace. Imagine their horror then when intelligence reports the presence of a hostile alien empire intent on conquering the universe!!! Oh no, what can they do? There's only one thing they can do, they bring in some hired help. This help comes in the form of a Cyberkill Mk III Battle Droid, leased to you by General De'ath, head of Carnage Inc.

Its mission, or rather YOUR mission, is to *'infiltrate, provocate and annihilate the enemy power...'* Easy for your average Cyberkill Mk III... or is it?

This is no ordinary blast 'em, kick 'em and beat 'em to death type killer game. This is a game where you have to think before you dink...

### The layout

Once you go through the load-up sequence – which includes a musical excerpt from Mission Impossible

– you land by shuttle on the first level. Your mission here is to find the body and 'info pad' of a lost earth agent. Of course, you don't know where he is, and there are about 50+ rooms for you to explore on your way to locating him – not that you'll actually find him in one of the rooms!!!

The rooms are 3D, in the style of Pandora's Box, and contain various movable and immovable objects, plus a whole load of suspicious-looking people. There are policemen, gangsters, 'blokes', guards, robots, women, purple things which zap your energy, things that look like handkerchiefs, and you – it's a cosmopolitan place if ever there was one! Some of these people you can push out of the way or blast, others fight back, so be careful!

Displays at the top and bottom of the screen give you information about the objects in these rooms. Touch them and you'll be able to get information about the objects – you might also be able to pick them up, or throw them, drag, open or drop them... You'll find guns, hand-grenades, flame throwers, metal bars, dust bins, boxes... and loads of other really useful things.

### Playing

The idea of this game is to find your way around the various rooms looking for clues to the whereabouts of whoever it is you're looking for. Nothing is immediately obvious, and to start with you have no weapons. So you go through doors into other rooms, you open dust bins and boxes to see if there's anything useful inside. Sometimes it's worth blasting someone just in case they have a key to a locked door. Sometimes you'll find a weapon, sometimes a jar, sometimes nothing at all.

Having found something, you then have to decide what to do with it. Weapons are obvious, so too are keys. But what do you do with the iron bar on level one, or the stick on level two? They're not for poking people with... they're for opening things, but what and how? This is the part of the game which needs thinking about. Most of the time, the game will lead you towards an answer, but you have to work it out for yourself. If you find a key, for example, there's usually a door nearby to open. Sometimes you get clues by asking for information about the object you're holding – it might be part of a machine, so all you have to do is find the machine and fit the object into it.

This isn't the kind of game where time is of the essence. Usually, you can hang around and think about what you're supposed to do next. Sometimes, of course, there are other pressures, such as when you're being chased by purple worms. At other times, there are objects to be skilfully avoided or moving platforms onto which you leap in order to get across a river or some other murky obstacle.

Level 1 is set in a kind of work colony with, amongst other things, factories, bars, sleeping areas, back streets and gangsters. Level 2 is set on a island with spiders, mines, rivers, foliage, a submarine and soldiers. Level 3 is a kind of derelict area with bombed streets, sewers, crocodiles, junk yards and genetics labs. Level 4 is set in a space station – I haven't finished level 4 yet!

Thankfully, you can save your present position to disc so you don't have to start from the beginning each time.

### Conclusion

If you want instant thrills, this isn't the game for you. If you want something more akin to a jigsaw puzzle, albeit with laser weapons, then Carnage will probably suit you down to the ground. The graphics are well crafted, full of imagination and detailed. The movement and sound are good. There's a good balance between gratuitous violence, skill, judgement and puzzle solving. There's also a fair amount of humour scattered about the place.

The only possible drawback is that, like a jigsaw, once you've done it and you know where everything goes, you may not want to to it again – though it will probably take you some time before you get to that stage – you'll spend enough time on it to get your money's worth.

### Helpful tip

It wouldn't run on my A5000 the first few times I tried it, so the nice man at 4th Dimension suggested that I do a <shift-ctrl-break>, initialising the computer without running the !Boot file – it worked well after that.

Carnage costs £25.95 from 4th Dimension or £24 through Archive. A

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| Purpose: | This is a simple example table to demonstrate some of the features of TableMate 2 | |
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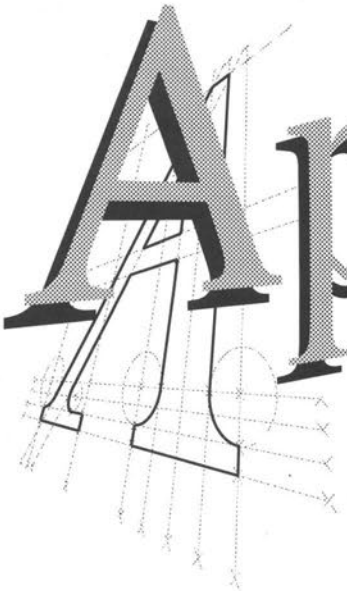
**TableMate 2**



# Apollonius PDT

*Computer Aided Design*

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Apollonius PDT is probably the easiest to use CAD system there has ever been, and yet has comprehensive geometric construction facilities, combined with realtime interactive parametric geometry - just drag a component and the entire drawing and its dimensions automatically adjust to suit. Can be used for technical drawing, mechanical simulation, animation and much more.
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# Multimedia Column

## Paul Hooper

### Genesis Professional

Well, it's finally here and I have created my first application. What are the differences? To say it is astounding is an understatement – it is almost a completely rewritten application. One of the major criticisms of Genesis II was that it was difficult to use – you needed to have a deep knowledge of the script language to use it to the full. All this has changed with Professional – so much so that the separate script language book is no longer needed, as everything is included in the main manual.

### Initial impressions

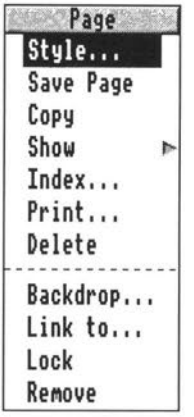
The first and most obvious difference is the change in all the icons. This new look reflects the more polished image of Professional. All the familiar parts of Genesis are there but they have been joined by a new application called !GenStyles. This is used to store master pages which can be defined by the user and then stored for later use within applications – similar to Magpie skeleton pages, the only difference being that alterations are not retrospective.

The manual has been extensively rewritten and is now in A5 ring binder format and includes far more illustrations with detailed descriptions of how to create many of the new effects as well as much clearer instructions on the program. All the script language is listed in the Script reference chapter.

### In use

Loading Genesis produces a title screen similar to Impression. Clicking on the iconbar icon allows you to edit an existing application or to create a new application. Pressing <menu> produces the normal quit and info alternatives, along with a submenu of the default options. Using this, you can change the default font, set up the grid, set the level of detail on ArtWorks files, set the 'home' page and all sorts of filing options. These will become the default when you start creating your new application. All your outline fonts will be available because the restriction of sixteen fonts has been lifted.

Clicking <menu> over your new title page will produce the page menu shown below. This type of menu is common not only to pages but also to graphics and text frames that you place on a page. The style option leads to a submenu which enables you to name the page, apply a style to that page, and specify the page size, colour and window controls.



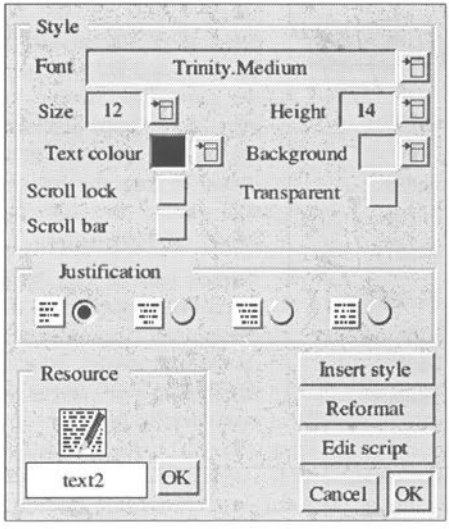

Other options on the page menu allow you to alter the backdrop and index words on the page. The normal save page, copy, print and delete are all here, as well as the option to lock the backdrop and prevent the user from pulling out extra frames.

Frames have a very similar menu but depending on their content. All types of graphics can be used, sprites, drawfiles, ArtWorks, BMP, Euclid and even Replay and Ace films. The clever new thing is the OLE (Object linking and Embedding). This is a system which enables you to edit any of the frames and then resave them in an application. For instance, if you discover a spelling mistake in one of your frames, hold down <Ctrl> and click in the text frame. Genesis will then load your text into Edit, and you can then correct your spelling mistake and, using the save option, you can then save the text straight back into the Genesis page. This can be used for all types of frames, not just text, but you do require a copy of the relevant editor. If you haven't got ArtWorks, for example, you won't be able to modify ArtWorks files.

### Style menus

Having covered the page style menu above, let's look at creating a frame of text. You pull out a frame using <select> as normal – the default text size will be used if you enter some text. By using <menu> over the text frame, you can bring up the text menu. Choosing the style option presents you with the dialogue box shown below which gives you total control over the text in a frame. Not only can you change the font style and size but you can also justify it and even set it up in a scrollable window

within the page. The colour of your text is no longer restricted to the sixteen standard colours, and if you are in a 256 colour mode, you can use a colour picker to choose exactly the colour you want. The background can again be any colour that you require or even transparent. You can save up to sixteen colours in your own palette for later use or just pick a colour direct from the screen.

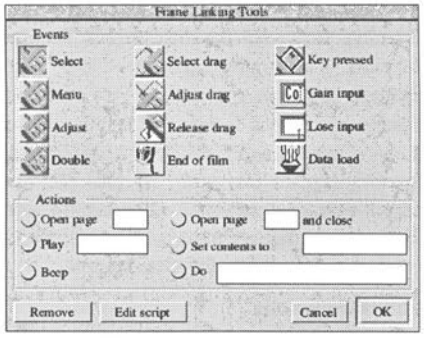



Having got your text exactly as you want it, you can go on to alter the border. You have four options: a conventional black border, no border at all, a 'sunken' border where the frame has a lowered 3D effect or a raised 3D border.

Graphic frames also have a style menu which allows you to alter a sprite into a BMP or vice versa. ArtWorks can have the amount of detail changed. By default, the graphic is snapped to size but you can, of course, resize the graphic.

### Linking frames

Any multimedia program is only as good as its ability to link actions and pages together. The new Frame Linking dialogue box shown below, is a model of clarity. At the top are the events which trigger the actions. You have twelve alternative events and one of these can be linked to an action in the lower box. So, to turn to another page, choose the 'Select' event and the 'Open Page <n> and close' action, insert the page that you wish to open in the writable icon and click on OK. The combinations are endless. The 'Do' action enables you to enter a line of script language to, say, play a sound sample or run a film. You can even edit the script using OLE from here or remove the link all together.




### Risc PC and Professional

Having had a Risc PC for a week, I tried Professional on this platform and, apart from a minor problem with the colour picker, the program worked fine. In fact, to test it out, I created the example on this month's disc using the Risc PC. If you have Genesis II and wish to run the example, please use the browser supplied on the monthly disc and not your version, as many of the new features will only operate with the new browser.

### Conclusion

I could wax long and lyrical over the improvements and potential of Genesis Professional and even after having had the program for a month, I'm still discovering new features. Genesis II was a fine package but Professional is, in a word... professional! If you have any version of Genesis then upgrade to Professional immediately – it's worth every penny. If you have been put off by the unreliability of Genesis before, or the difficulty of learning the script language, try Professional – you won't be disappointed.

### The Swap Shop

After my offer last month, I have had over forty letters requesting sample applications to which I have now replied. I have decided to extend the offer for another month, so if you have never thought about multimedia or have wondered what it's all about, just send me a few discs and the return postage and I can provide you with a catalogue and

a few sample applications to try out. With over forty applications in the Swap Shop catalogue, this is a resource that is available to all Archive readers free of charge.

My thanks this month must go to John Wilson of Strathclyde who sent me a copy of a Magpie binder called 'Dictionary' which is a dictionary of computer terms used in his school. No-one has sent me a Key Author example, but I have converted a couple of Swap Shop applications into this format.

### The End Bit

If you have any questions about Genesis, Magpie or Key Author, or if you would like a copy of the Swap Shop catalogue, write to Paul Hooper, 11 Rochford Road, Martham, Great Yarmouth, NR29 4RL. (0493-748474) A

# The Advance Column

## Robert Chrismas

### Advance update?

Will there be an upgrade to Advance? If there is, will it offer more features, or just bug fixes? Last month, I was suggesting that an upgrade was unlikely since Computer Concepts say they are not supporting their part of Advance. Then I received a letter from Jane Handcock of Cambridge which included the news that Acorn had told her that 'an update of Advance has already been tested' and so they (Acorn) would not be able to fix the problem she had reported until 'the next release'.

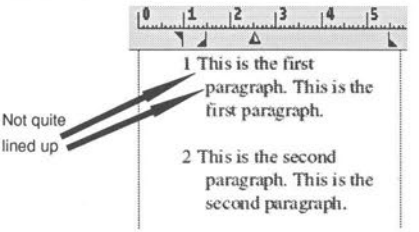
What changes would you like to see in Advance? Should it have more features? How could it be made easier to use? Please send me your suggestions.

Incidentally, Jane's problem with Advance and the Calligraph laser printer (Archive 7.7 p27) still remains a mystery. Calligraph might be expected to blame Advance – just as, when things go wrong, programmers can be relied on to blame hardware faults and computer manufacturers to blame software. However Calligraph, who seem to have been very helpful, are investigating the possibility that the problem might be caused by insufficient memory. So Advance may yet be exonerated.

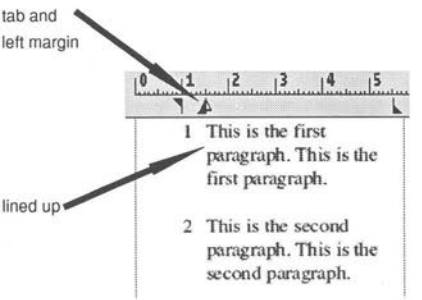
### Numbered paragraphs

If you want to start a paragraph with a number or a bullet, it will look neater if the number appears to the left of the text.

You might try to do this by moving the 'first indent' margin to the left of the left margin. As the illustration shows, the start of the text on the first line does not quite line up with the left margin of the following lines.


0 1 2 3 4 5
1 This is the first paragraph. This is the first paragraph.
Not quite lined up
2 This is the second paragraph. This is the second paragraph.

To cure this, put a tab stop at exactly the same position as the left margin. Type the paragraph number then <tab> to align the following text with the left margin.


tab and left margin
0 1 2 3 4 5
1 This is the first paragraph. This is the first paragraph.
lined up
2 This is the second paragraph. This is the second paragraph.

Remember the 'Numeric' button on the ruler will allow you to position margins and tabs precisely.

### Data transfer

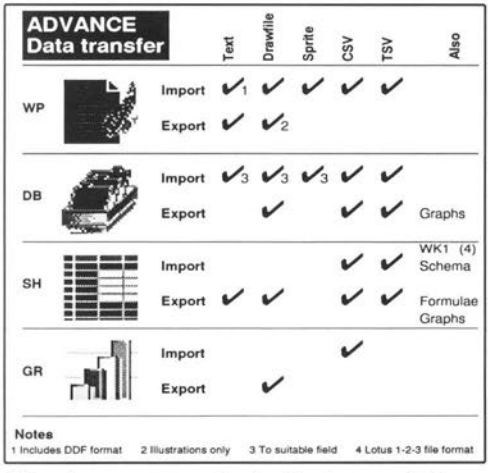
"Sorry, you can't load that file into this program." How many times have you seen some variation on this infuriating message. Gabriel Swords missed it from his list of depressing error messages in the Comment Column (Archive 7.7 p51). I cannot imagine why. No amount of crying, "But it's a picture, and you're an art package. What are you thinking of?" will have any effect.

I spent a fair time last week experimenting with file transfer between Corel Draw and ArtWorks and now I know the first principle of data portability: 'You cannot have too much data portability.'

Archimedes users may find they need to transfer files between different Archimedes applications, or even to and from applications on IBMs and Macs. If you need to move files to or from other machines, most of the work will probably have to be done on the Archimedes. There are more IBM files in the world than Archimedes files, so we gain more from being able to use both.

In the same way, it is more useful to an Italian to learn English than it is to an English person to learn Italian. Italian may be a better language, but more people speak English.

Advance is pretty good at handling standard Archimedes file formats. There is a diagram illustrating this on page 301 of the manual. I have presented the information as a table below. The manual omits AdvanceWP's ability to output CSV and TSV files, presumably because you have to set the filetype after the file has been saved.




When it comes to transferring files between different makes of computers, we can all be grateful that ASCII code is a well established standard, so text, CSV and TSV files should present no problems.

I have tried importing Lotus 123 files (filetype WK1) into AdvanceSH and this seems to work but there are a few things to watch. WK1 files will only load into a new blank sheet – if you have edited the sheet at all, the WK1 file will just be ignored.

Files straight from Lotus 123 have loaded without problems although I have not checked what happens to features which cannot be reproduced in Advance (like unusual formulae). I have also transferred some Fireworks files in WK1 format, but here I have had a few problems. So far as I can tell, they only occur if the sheet is bigger than the AdvanceSH default size. Larger files cause my computer to crash.

Next I plan to try altering the size of the default AdvanceSH document. If you want to try this, look in the !Advance.defaults directory. Before altering the SH document, make sure you make a backup of the original. The SH document can be loaded into !Edit and I suspect the size can be changed by editing the second line. Alternatively, it may be possible to create a new sheet, enlarge it then save it over the default.

A wide range of DTP and word processing documents can be transferred into AdvanceWP, but only if you have access to Impression or Style. Advance can use the Extension 'modules' which come with these packages. Included with Style are modules to load Rich Text Format, WordStar and Word Perfect 4.2. There are also modules to load different types of ASCII files as well as many native Archimedes formats. These modules are easy to use – you just double click on them after Advance has been loaded.

### Stand alone translation programs

Thanks to the convenience of the RISC OS desktop, there is no reason why we should not see a wide range of programs which translate files from one format to another. How hard would it be to write a program which converted, say, Microsoft Works files into Archimedes Advance formats? If it could also translate in the opposite direction, that would be all the better.

I would not mind if it was not able to translate absolutely every detail of the original file. It would not matter much if a spreadsheet lost its original fonts, for example. A log file listing the details which could not be translated would be quite adequate.

Send comments, ideas, suggestions and problems to Robert Chrismas, 8 Virginia Park Road, Gosport, Hants PO12 3DZ. A

# ScanLight Video 256

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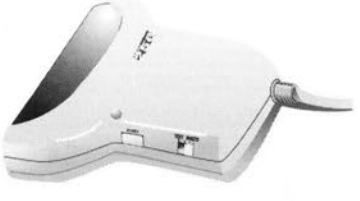

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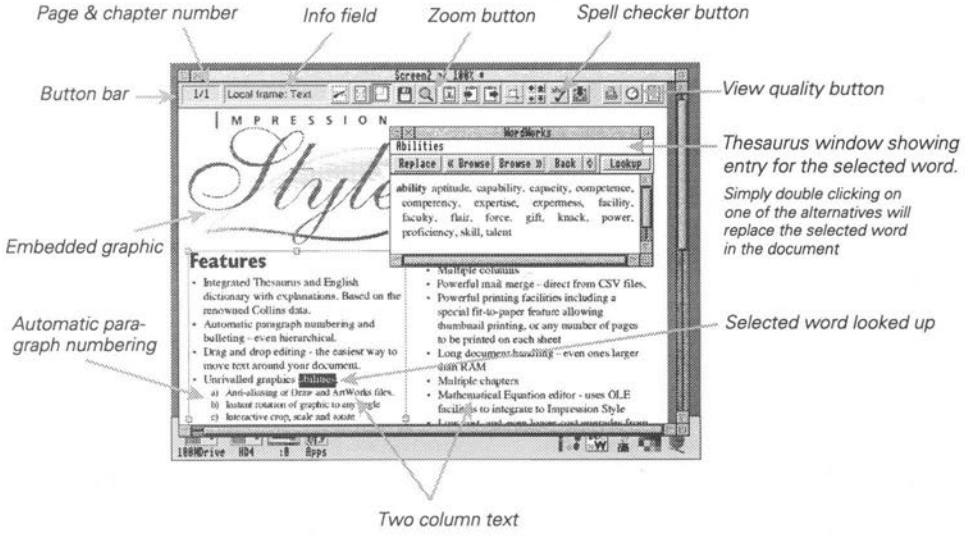
# Does your writing have style ?

Impression Style is the newest word processor member of the Impression family - a major update over earlier versions, with special attention paid towards improving the word processing abilities still further, and making it even easier to use than before. So, for example, it now includes automatic paragraph numbering, two sorts of on-line help amongst dozens of other improvements.

For those with technical writing needs it includes a mathematical equation editing utility and table building utility. For writers it includes the WordWorks dictionary and thesaurus package. Other features that help make Impression Style a better text processor include automatic abbreviation expansion, drag and drop editing, an optional, configurable tool bar, along with firm favourites such as spell check as you type.

And for those who need complete control over the page layout and appearance, Style offers a comprehensive set of DTP features.

IMPRESSION Style




*"There is no other product on the Acorn platform to touch this, whether at the £100 asking price point or at £500."*
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*"If you want the best available word processor for the Acorn Archimedes in terms of features, ease of use and price, Style wins hands down."*
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# PipeLineZ

## Gerald Fitton

Thanks to all of you who came and had a chat with Jill and me on the Colton Software stand at Harrogate. It is always an interesting experience to meet the faces behind the voices and the letters.

### Elementary PipeDream

There has been much interest shown in Ernie Cobbold's book-on-a-disc, 'Elementary PipeDream'. The Archive office has a review copy so, if you feel able to review it, please contact them. You will need PipeDream 4 and be interested either in learning PipeDream 'from the beginning' yourself or be interested in resource material for a course in PipeDream that you are going to teach.

### Stamps

I have had a wealth of mail thanking Ivor Cook for his Basic program which works out UK stamp values. That program appeared on an earlier Archive disc as the file [Postage]. Since then I have received a draft PipeDream custom function version from Ivor. He is still working on it and I'll include it on the monthly Archive disc when it's ready.

### Matrix inversion

I have received almost as much mail about matrix inversion as I have about stamp selection algorithms. Perhaps the nearest format to a PipeDream solution which I have received is from Bob Ardler. The way in which you use the method he has sent me is to run a Basic program. The somewhat novel feature is that the Basic program accepts as input a matrix held as a PipeDream spreadsheet and returns its inverse also in PipeDream format!

Bob does not claim originality for the method but acknowledges the work of two of his 12 year old students who originally wrote the essentials of the program in Basic for a BBC model A in the 'good old days' when WIMPs hadn't killed off the thrill of writing simple (and not so simple) programs. I agree with the sentiment expressed by Bob: "The sad thing is that when the Master gave way to the Archimedes, the flow of programming prodigies pretty well stopped... What became of those ZX81, Pet and Beeb reared coders?... Current wisdom is that you teach word processing and spreadsheets, not programming. But for ten glorious years, programming meant freedom for little mathematicians straining at the leash . . ."

However, I would add that I've discovered a new breed of 'programmer' who, instead of writing in Basic, writes custom functions for spreadsheets and is thrilled by the way in which their 'creation' takes on a life of its own. Perhaps that's why I'm so thrilled to have received Ivor Cook's custom function version of his Stamps algorithm. Of course, Basic is much more versatile in that you can 'get at' the operating system and, when doing sums, Basic is much faster than even the best of custom functions. By the way, don't have any doubts about it, nearly all the constructs of Basic (including constructs such as CASE and INPUT) can be written into a PipeDream custom function.

### Lost Wordz

Following up my comment under this heading in my last article, I have had a few replies saying that the 'fix' I described works most of the time. One disc file which I received which wasn't fixed was sent me by Stephen Williams. His Fireworkz document included quite a few embedded DrawFiles. He selected the whole document and then executed the Edit – Make – Make constant command. All looked OK. He saved the amended file (overwriting the earlier version as he did so). When he came to load it – disaster – it wouldn't load ("fatal error")!

Stephen is not the only one of my correspondents who has saved a complex Fireworkz file which looked OK at the time of saving only to find that it wouldn't reload.

In Stephen's case, I was able to salvage nearly all of his work (it was a big document) by deleting all the embedded graphics using !Edit. I guess that he has the non-embedded versions of his drawfiles somewhere and will be able to reload them.

This brings me round to my request to you. If you send me Fireworkz Version 1.07 documents for publication, please don't embed the graphics but

leave them referenced. Not embedding graphics is my 'work around' for fatal errors caused by embedded graphics!

Finally, on this topic of lost words – do not attempt to delete the base style nor the base HeadFoot style – more often than not that results in a fatal crash!

### Z88 to Archimedes Link

At the Acorn Spring show at Harrogate, I was told about a new, improved method of transferring files between the Z88 and the Archimedes. When I get more information myself I'll let you know.

### ClassCardz

This product is not software on a disc but printed paper. Two sets of ClassCardz are available, one for Wordz and one for Resultz. A set of ClassCardz consists of worksheets which allow you to work through a sequence of tutorials and so learn how to use the package. If you buy a site licence, you get ClassCardz free, otherwise, you can buy them direct from Colton Software.

### Harrogate

There have been many changes at Colton Software since Robert Macmillan left. They have taken on new specialist staff and we met one of them, Jeremy Turner, for the first time. Better still, on Saturday afternoon we were treated to his excellent demonstration in the 'Acorn Lecture Theatre' of the Fireworkz package. The application he used for his demonstration was an analysis of the use of electricity in the home which showed off Fireworkz to great effect. I have modified his file slightly and I'll be including it on a future disc when I've checked back with him.

After his talk he was approached by many would-be purchasers – I can recommend the Acorn Lecture Theatre to software suppliers!

In the past, users of PipeDream or Fireworkz have visited the stand with the intention of having a chat about their uses of a product they used regularly. This time fewer owners of PipeDream or Fireworkz than usual came to talk to members of Colton Software (see below); in contrast more readers of PipeLineZ than usual came along with messages of encouragement and thanks.

At Harrogate, I found that many more of the visitors to the stand than usual were not PipeDream or Fireworkz users but they had a very specific application in mind and they wanted to know whether the packages on offer would do the job. More than that, they wanted to see a demonstration of the package running with their own application. I spent much of my time on the stand building up a large variety of skeleton applications using either PipeDream and Fireworkz. At the end of this demonstration, and only then, would the enquirer decide to buy the product. I find it interesting that potential customers are now quite determined to have their own application demonstrated (some in reasonable detail) before they will purchase the package! They don't buy on reputation or on reviews any more!

I talked to about half a dozen owners of small companies who I have come to know but whom I shall not name. It would seem that recently cash flow has been a problem – for those of you who know the difference I don't mean profitability! A theme they all expressed in common was that they all believed that Acorn's new Risc PC machine had arrived just in time to save them having to reduce the size and flexibility of their businesses. *(I admit to being one of those companies! Ed.)*

### Colton Software

Although there was a Risc PC on the Colton Software stand, it was not fitted with a 486 board (they don't exist yet) but a PC running Windows was used to demonstrate the PC Windows version of Fireworkz. It does look good to me and was commented on favourably by the many PC users who visited the stand. If you have the RISC OS version of Fireworkz, you will be able to buy the Windows version at a substantial discount – my guess is about £75. Get your name on the Colton Software mailing list for release dates.

The current version of Fireworkz is 1.07 and, from my investigations, it would seem most likely that the next version will be released at the same time as Recordz, the Fireworkz database. The best estimate I can make is September 1994. I know many of you would like it to be sooner. I believe an earlier release data is unrealistic but I am still hoping that Colton Software will prove me wrong!

Colton Software, like many other vendors, reduced their prices specially for the Show. These low prices are not 'general' prices.

However, let me say this to those of you who are contemplating upgrading your software to Fireworkz; get a quote from Colton Software as well as your favourite supplier. Colton Software will take a whole range of packages (even the obsolete Acorn DTP) in part exchange – it is possible that your favourite supplier (NCS?) doesn't offer that service (yet!).

In the PC world, it is a common practice to charge for upgrades from one version of a package to another. I believe we shall see that practice becoming more common in the Acorn world. I have no inside information, so don't read more into what I say next than that it is my guess. I have said before in my PipeLineZ column that software suppliers (in the Acorn world) take their cash only when they sell you the package. Every time they upgrade the product and give you a free upgrade, it costs them money. Generally, they hope that there will be enough new sales to offset the cost of upgrading current users!

Let's think about PipeDream 4. The current version is 4.13. It is 'stable'; there are a few bugs but they are obscure and well understood. If (when?) a new version is announced and if free upgrades were to be given to all current users, the cost of putting the upgrade on the thousands of returned discs could easily be much greater than the revenue generated from new sales of PipeDream 4 (at its new low price)! What to do about it? Would PipeDream 4.13 users pay a few pounds for an upgrade from 4.13 to 4.20? How much 'better' would it have to be before you'd pay for it? Answers to Mark Colton please!

Now let's think about Fireworkz, currently at version 1.07. When Wordz, Resultz and Fireworkz were launched, a large number of PipeDream 4 users converted to Fireworkz. Because of this, the number of Fireworkz users is much larger than the number of PipeDream users was when the latter was at the same stage in its development cycle. The price of Fireworkz now is lower than PipeDream was. These factors combine to make the cost of providing a free upgrade to the large number of Fireworkz users, a much larger proportion of the potential revenue from new sales than was the case with PipeDream.

Perhaps the only solution for our software suppliers is to charge for upgrades. Hence my next question. If you decide not to buy Recordz (because you don't need it) but want to upgrade the Wordz-Resultz combination you now have, would you be willing to pay for the upgrade or would you expect it to be free? Once again, answers to Mark Colton please – but, in this case, I'd like to know what you think too!

Finally (on this topic at least), I decided to 'upgrade' my Impression II to Impression Publisher. I telephoned Computer Concepts to find out how to do it. I didn't have to send back my master disc. All I had to do was to quote the serial number of my Impression II (found in the manual), give them my credit card number and that was that! I still have Impression II complete and intact. It doesn't seem right to me. One thing for sure, if I sold it to one of you and you tried to use it to upgrade to Publisher then you would be disappointed!

Colton Software insist on you sending them the master disc before they will use it as a 'trade in' towards Fireworkz.

### Risc PC

It's probably not a PipeLineZ topic but what do I think of the new machine? The thing which struck Jill immediately was the beautiful way in which coloured pictures are displayed. Much better than pictures on the TV. I can't remember where I heard it but one of the second processors which may become available is an MPEG board. MPEG is a compression algorithm for full motion video. The next two Astra satellites will be beaming down MPEG-2 digital TV pictures at about 15 Mbits/sec. This data stream can be decompressed to about 300 Mbits/sec and displayed on a monitor. Phillips, who sell a monitor for use with the Risc PC, also sell high quality analogue TVs. When we look at a Risc PC, maybe we're looking at a prototype digital TV! If Acorn can get into the digital TV market, we might find Risc PC machines substantially undercutting 486s!

My only other comment is that I'm going to wait until my birthday (28th July) before I give serious

consideration to buying whatever is then the 'top of the range' Risc PC.

**Finally**

Thanks for even more "Keep up the good work!" letters from you; I'm truly flattered.

Once again it seems that it is time to remind you that it is quicker to write to me at the Abacus Training address given on the inside back cover of Archive than via the Archive office. If you have something substantial, please let me have it on an 800 Kb format disc (I can't read HD format discs) – particularly if you have a problem rather than a contribution. This will save me a lot of typing and will ensure that my solution to your problem is relevant to you. A

# Comment Column

• **Aggrieved editor strikes back** – In Archive 7.9 p41, I answered Alan Latten's comments by saying that Archive was indeed the last-surviving Acorn magazine to be produced using Acorn technology. An aggrieved Acorn magazine editor has taken me to task and so I am hereby repenting in dust and ashes.

Seriously though, this gives me the opportunity to tell you about GAG-NEWS (which may sound like a contradiction in terms) – the German Archimedes Group news magazine. This is a 52-page A4 magazine produced for the German Archimedes (and Risc PC?) market. If you want details, please contact Olaf Krumnow, August-Bebel-Straße 102c, D21029 Hamburg. *Ed.*

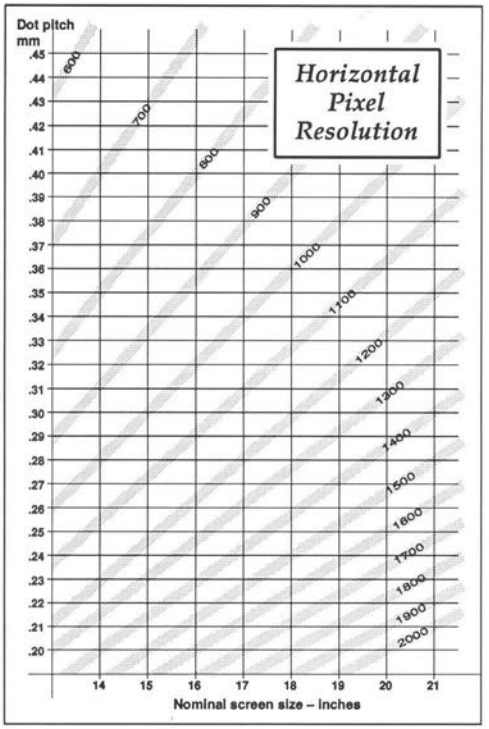
• **Macs/Risc PCs** – Alan Latten (Archive 7.9 p41) seems to be dismayed at the way some of the other Acorn magazines have moved to/reverted to the Mac platform and Quark Xpress. Having used Quark extensively myself, I feel sorry for the poor editors. Quark is very slow and not as easy or friendly to use as Impression (still waiting for Publisher!) and, whilst there are many features in Quark 3.2 that are easier to implement than Impression 2, Publisher appears to solve most of these. Apart from the use of Pantone colours, I cannot think of anything that can be done in Quark that cannot be done in Publisher (and often Style as well), and there are several areas in which Publisher is far more sophisticated than Quark, especially in handling wordprocessing and longer documents – what an amazing utility WordWorks is! The display is far more WYSIWYG than Quark, with the hardware being fast enough to handle almost anything without having to revert to 'greeking' of text (and hardly ever for pictures, at least I never use this facility in Impression). Generally, I find that it takes half the time to complete a task in Impression than it does in Quark. (ArtWorks is very much more usable than Illustrator, helped somewhat by its speed and the fact that it doesn't seem to have the same problems with memory that Illustrator has.)

I don't see why anyone who has used Quark or Illustrator cannot, within a couple of hours, learn how to use all the features they normally use on these packages in Publisher and ArtWorks. Another thing is that RISC OS 3. With !NewLook, or version 3.5, RISC OS looks a lot nicer than System 7.1. While this might not seem important, I believe that it is. When you are looking at a screen all day, the easier it is on the eye and the touch, the less tired and worn out you feel at the end of the day. Added to that is the fact that RISC OS is easier to use in general, especially on filer operations, and considerably faster. I say let these editors suffer, because we know that when they get home they'll switch on their Archimedes/Risc PCs and wish that they could use them at work. Charles Matthews, Leeds.

• **Monitor resolutions** – Some monitor suppliers make literally unbelievable claims for the pixel resolutions of their products. Monitors are advertised as XGA (1280×1024 pixels) when they simply do not have enough dots to come near that resolution. I suspect that such advertisements indicate that the circuitry of the monitor will process the data stream for XGA without the picture breaking up, but the resulting display may be little or no better than SVGA+ (1024×768 pixels) on the same monitor.

Whether such advertisements can be described as misleading is questionable. It is difficult to establish the relationship between the triangular array of triple

dots produced by a (non-Trinitron) monitor and the rectangular pixels defined by the screen mode. The resolution limit is, I think, not as simple as 'divide the screen width by the dot pitch', unless you are drawing vertical red lines one pixel wide, for example. However, if you try to stretch the resolution much beyond this simple formula, there must quickly come a point where no improvement is achieved. The skeleton feature of outline fonts may even fail for very small text.




I therefore offer a rule-of-thumb to determine the maximum effective resolution for a given monitor. First calculate the Archive Resolution Factor (see Archive 7·9 p16), which is the nominal screen size in inches divided by the dot pitch in mm! The Singleton Formula then states that the maximum horizontal pixel resolution is twenty times this figure.

The results are shown on the quick-reference chart, above. The lines are deliberately fuzzy because the relationship is not precise. The chart suggests that I am just OK using mode 102 (1152 horizontal pixels) on my 16" Eizo 9070 monitor, which has 0·28 dot pitch. The manufacturer's claim that it will display 1280×800 pixels, however, is questionable. The A540 cannot generate that resolution, so I cannot try it. Colin Singleton, Sheffield.

• **Risc PCs and RISC OS 4** – Well I've seen and used the new Acorn "ARM RISC processor based, RISC OS Risc PCs" (I get the feeling that Acorn are trying to ram a few things home, to Apple perhaps...). They are everything everyone predicted and more. The hardware has major changes in both architecture and components, and yet Acorn don't seem to have had the major compatibility problems Apple have every time they change hardware to any extent. The Dual-Processor Open Bus is a great piece of innovation, and apparently more than one extra processor can be supported. (In future machines this could be useful for, say, Pentium, MPEG *and* DSP support simultaneously!)

I note with interest Charles Moir's comment that the VRAM shouldn't have been limited to just(?!) 2Mb. Perhaps third parties could get around this but, if not, there's always the 16Mb DMA capability using the DEBI bus. We could see larger and larger screen modes because the VIDC20 can be programmed to clock faster. As the production rate increases, the chips may be rated higher. They are currently rated at 110-135MHz but Acorn say that they've got some to run at 165MHz+. I also believe that 16-bit stereo sound should have been standard, but if the sound card is £99+VAT like the PC card, I won't be complaining. *(I heard nearer the £50 mark. Ed.)*

Moving on to RISC OS 3.5, OK, so not much has changed, except a few cosmetics, but it's still easier to use and more intuitive than either Windows *or* System 7. Those things that *have* changed are mainly to support new hardware, and everything else solves all the problems which various PD and homegrown patches do on my machine! (Acorn are out to spoil the fun I get from righting their wrongs.) The boot sequence which is split into pre- and post-desktop areas, is very much like my own, except that, with the new machine, I wouldn't need to bother because the pre-desktop section of my boot is almost exclusively devoted to some of my more stubborn patches (now defunct). The ability to

include your own applications in Apps covers the other major part of my patchwork.

So what is left to fiddle? There's the 512Mb hard disc partition limit, but Acorn are 'working on it' and are doing something about the 77 directory entry limit too, apparently. The filer can now display more than 10½ letters in a filename, so how about filenames to suit? And maybe even Replay icons! (or perhaps not...) However, it would be a bonus to have 32-36 character filenames with the ability to use normal spaces, to configure both the font size *and* the number of pixels (logical) that the filer used for each desktop display entry and have filename text able to be displayed on more than one line. As display sizes get bigger, filer font size could go down to 8pts.

Another nice feature would be if the Task Window could also run independently of a text editor and emulate a non-desktop screen mode. This could be fully editable with an icon appearing on the iconbar, of your own choosing, and the wimp poll allotted to it could be configured so as to allow slower chips to be emulated. This would be useful for some old games and such-like which run too fast on newer chips already. It should also allow full-screen operation in a similar manner to the PC Emulator/cards.

With all these new graphics capabilities, something really does need to be done about Paint. Firstly, it needs the ability to use transparencies and secondly Paint should be merged with ChangeFSI. Or perhaps, rather than this last step, a nice modular graphics filing system should be introduced, integrated into the normal filer, with the ability for conversions for loading into applications simply by dragging like a normal sprite. TIFFs, PhotoCD, Clear and JPEGs should also have the options of not being converted into sprites, as these are becoming standard RISC OS files anyway. This would leave "!PaintFSI" free for simple graphics processing, like gamma correction. This, combined with OLE support, would allow all applications which use sprites (Draw, Genesis, etc) to accept any bit-map graphics format and process them in the background. There could be standard conversions to VGA or SVGA pixel sizes and an optional Shift-load that would bring up a dialogue box with extended conversion options.

On a similar note, it would be nice to see standard Replay soft MPEG support in RISC OS 4, with hardware support provided when/if you buy MPEG chips. This would give rudimentary support for VideoCDs (another up and coming standard).

The pinboard needs radical updating with the ability to save to the pinboard, which could store the files in a scrap directory, along with pointers as to where on the screen they were saved. The filer could also have a wastebin-style retain-after-deleting option with a maximum size configurable scrap directory which held the newer files deleted. This could be accessible from the iconbar, with its own icon which could also be used for deleting.

On the hardware front, it would be nice to see somebody somewhere providing 3DO cards, be they DEBI or DPOB. This could be very interesting as the 3DO standard uses an ARM610 as its central processor. Maybe the card could be configured in order to allow the second ARM chip to co-process RISC OS when idle, or maybe a second ARM chip wouldn't even be necessary! The colour support already exists, so maybe all that would have to be added would be a couple of the 3DO ASICs for specialised rendering and a double-speed CD-ROM drive. I can but dream... Charles Matthews, Leeds.

• **Risc PC could be better!** – The Risc PC is a good machine, and capable of standing on its own merits, but I feel that some of the comparisons with other machines have been a little biased.

For example, Acorn have compared the Risc PC to the Power Macintosh. While the Risc PC has a lot of nice features, it should be pointed out that none of the Risc PC range (although I cannot speak for future ARM 8 processors) is anywhere near as fast as a Power Mac. It's not dissimilar to comparing an A310 to an A540 – the Power Mac is indisputably more expensive, but it is also significantly more powerful. Similarly, the Risc PC is slower than a Pentium based PC, at least while it only has an ARM610 in it. On the other hand, I'd choose RISC OS over System 7 or Windows any day, but that's only a personal preference.

ARM are in the business of making low-cost, efficient, low power consumption processors, and are market leaders in these terms. Hence, a comparison

of the ARM600 with the comparable chips is, quite rightly, going to show it in a good light in these areas. But it should be pointed out that ARM are not building processors for pure speed and, as such, the ARM series are going to be slower than their competitors. While the low power consumption is good for portables (for example, the Newton), it is not such a major issue for a desktop computer. So, to be fair, the ARM6 looks slightly deficient as the basis of a desktop machine – although, because RISC OS was written for ARM processors, it was the only choice Acorn had in the matter. On computing power alone, Acorn have only just caught up with (the lower performance part of) the competition, and I feel it is slightly unfair to claim processor to processor equivalence while the ARM6 is significantly slower.

Related to this point is that the bus (i.e. the connections between a processor and the memory) in the Risc PC is only 32-bit (i.e. there are 32 parallel connections). Perhaps I am asking too much here as Acorn are likely to have restricted the bus for price reasons, but there are an increasing number of 64-bit processors out there – the Pentium, Dec's Alpha, the MIPS 4400 – all of which are fast. If Acorn are encouraging people to plug in second processors from third party manufacturers, (or if ARM eventually release a 64-bit processor) then the performance of these chips is going to be restricted by the bus – a 64-bit bus can transmit twice as much information as a 32-bit one (all other things being equal). Hopefully, the performance loss will not be too bad, given a decent cache, but to see the importance of the bus width, look at the performance difference between an Intel 80386DX chip (which is 32-bit) and an 80386SX (which is almost identical but with a 16-bit bus). The person from Acorn that I spoke to at Harrogate said that there were no plans to make the bus any larger, but perhaps Acorn will reconsider for their next computer.

The Risc PC currently (although there are rumours to the contrary) seems to have a 2Mb limit on video RAM. Hence, it can display 800×600 screens in 16 million colours, which is quite impressive. On the other hand, the VIDC20 itself is capable of displaying that many colours in 800×800, and (if the frame rate is dropped to 56Hz) 1024×768. There is a technicality about the latter – workstation guidelines are coming in which say that, in order to reduce flicker, computer displays should update at a minimum of 60Hz (compared to 50Hz for British television and for the older Archimedes modes 0-21 and 24). There is a small but significant difference in quality between a 16 million colour screen mode and a 32,000 colour screen mode, and since VIDC-20 is capable of displaying these larger screens, I would have preferred Acorn not to limit their use. Anybody who has used a 1024×768 display will tell you that an 800×600 display feels small.

I am also a little disappointed that Acorn did not take the opportunity with RISC OS 3.5 to produce a pre-emptive multitasking system, similar to that on Unix, which would have a few advantages over the current co-operative multitasking which RISC OS has had so far. RISC OS 3.5 also depends rather heavily, it seems, on some compatibility features between the newer chips and the earlier ARMs (2 and 3). This means that ARM are restricted to producing chips which are backward compatible with the old ones, rather than concentrating on the newer design features of the ARM6 and above – this consideration is one reason for the inefficiency of the Intel processors, since even a Pentium must be compatible with an 8086, designed in the late '70s. I acknowledge that this will involve a lot of work, though. Perhaps they will consider these issues in RISC OS 4.

I hope Acorn will take these matters into account with their next machine, and that their next machine is not too long in coming. For now, the Risc PC is a well-designed computer and the Acorn crew are worthy of a great deal of praise for it; but it is not perfect, and I do not think that it will have quite the commercial draw which Acorn seem to expect of it.
Andrew Garrard, Downing College, Cambridge.

*I sent Andrew's letter to Keith Parker, knowing that he was familiar with Macs and Acorns, both at work and at home...*

• **Risc PC, the reply** – I was interested to read Andrew's letter but, as someone who has used Apple Macintosh machines (up to and including Quadra

950s and the PowerMac) I would like to address some of his comments.

The Risc PC review was written by and for Acorn users so a *little* bias is to be expected. Reviews written by Mac fans about Risc PC are just as biased the other way! *(See comments on the PCW review of Risc PC on page 34. Ed.)*

Speed is a very subjective matter. The current Risc PC uses an ARM610 running at 30MHz, the next 610 chip will probably run at 40MHz and, early next year, the ARM700 will run at 30MHz+, etc. However, clock speed is not the best way to measure the speed of a computer despite the fact that it is definitely measurable. My guess is that the faster ARM700 will run at the same speed as PowerMacs and the ARM800 much faster.

Productivity is probably the best measure of the speed of a computer although this is less quantifiable. The way that you have to move to the menu bar *every* time you want to bring up a menu on a Mac (old or Power) is not as intuitive as RISC OS which relies on the middle mouse button. No matter where you are on the screen, click <menu> and Hey presto! up comes the menu related to the process under the mouse pointer!

I am particularly aware of this, having been struggling with PhotoShop 2.5.1 on a big Quadra. The process is so slow I have to fight off sleep – and remember that, on a Quadra, PhotoShop runs in native mode whereas, on a PowerMac, it runs under emulation – and I enjoyed some good naps. (Flippant? Yes, maybe, but PhotoShop is *extremely* slow.) I was delighted to be able to save the scanned image (36Mb of it!) as a TIFF file, transfer it to a Risc PC using a SyQuest and complete the editing in DA Picture. (I could equally well have used PhotoDesk.) The difference in speed is quite staggering. The icing on the cake is that PhotoShop costs £700 on the Mac, and is estimated to cost about £1,000 for the PowerMac version whereas DA Picture costs £99. Programs such as DA Picture and PhotoDesk (£170) should really 'speed up' Risc PC sales.

What I have found interesting is the reaction of companies who sell Mac (or PC) hardware when they see the Acorn (any 32 bit model). I have been working with Tony Tolver of T-J Reproductions and he has had a drum scanner installed. He uses a lonely Mac Quadra 900 to drive the scanner and an imagesetter and, yes, it is fair to say that the Mac acts as a slave for his Risc PC, A540 and A4. He demonstrates the power, simplicity and the speed of true multitasking on his Acorns and the Mac/PC people's reaction is always (well, 99%) "Very impressive, but why isn't it marketed properly?" But that's another question!

Finally, for Andrew to compare Acorn's Risc PC with DECs, Alphas and MIPS 4400 is rather unfair. It's like comparing an Austin Sprite with an Aston Martin – they both have four wheels, look good and are convertibles but when they were sold they cost £2,000 and £50,000 respectively – let's have a little realism! However, it is fair, to compare the Risc PC with a Pentium native machine and all I have said above applies equally well to that as it does to the Macs!

Overall, give me Risc PC over the Macs and IBM compatibles any day! Now, if somebody wants to write the driver software for a RIP and a drum scanner... ? Am I dreaming? Watch this space!

Certainly, in my area of interest, virtually everything that IBM compatibles and Macs can do can be done just as well on the Acorn platform. Also, if we are concerned about the UK's needs, if everybody bought Acorns, the deficit on the balance of payments would fall. Acorn would then take over Olivetti and they would start producing Alpha and MIPS beaters, 256Mb of VRAM, 64 bit busses and everything else we could ever want. Am I dreaming? Well, maybe, but the Risc PC can do a very good job now and it does it without the one thing that is standard in every other platform – built-in-obsolescence! Keith Parker, Southall.

• **Wot? No tapestreamers?** – I am often asked, "Why doesn't Archive stock tapestreamers?" The less polite enquirers imply that it is because we make too much money selling removable drives. It is true that we have championed SyQuest removable drives over the years but only because I think they are good and have, for a long time, used them for both data backup and data transport.

Why not tapestreamers? Well, we used to sell them e.g. I have just looked at an October 1990 Archive Price List which has Oak Solutions' 60Mb tapestreamers at £1100 and 1Gb tapestreamers at £2995!!! These days, the cheapest tapestreamer I can find to run on Acorn machines are from Morley Electronics: £699 +VAT (=£821) for 250Mb and £1099 +VAT (=£1291) for 2Gb. When you compare these with 270Mb removable hard drives at £550 inc VAT which are so much faster and so much more convenient, perhaps I can be forgiven for not stocking tapestreamers?

If anyone knows of Acorn-capable tapestreamers at prices more like those you find in the PC world, please let me know and I'll pass the word on through Archive!

The other device I keep getting suggested to me as an alternative is the magneto-optical drive. True, the media are less expensive than SyQuests, but the drives are somewhat more expensive and they are *extremely* slow by comparison, especially on writing which takes place at roughly one third of the speed of reading. *Ed.* A

# Hints and Tips

• **Cumana CD-ROM 300 (SLCD), Photo CD.** I had problems installing the new module on my A5000. I had followed the installation instructions given in the help file, putting new lines in the !Boot file but could not change the module and kept getting error messages. I contacted Cumana who were very helpful. By a process of elimination, we found out that the lines added to the !Boot file should be this:-

```
RMEnsure SLCD 1.22 RMLoad (Path).SLCD.
                                        SLCD1
RMEnsure SLCD 1.22 error SLCD version 1.22
                                    not found
```

where (Path) will be something like

```
ADFS::IDEDisc4.$.Cumana
```

or whatever the directory is that contains the new module. Angela Bareford, Woking.

• **IDEFS and RISC OS 3.** I recently upgraded my A3000 to ARM3, which proved to be a very harrowing experience due to certain... err... misunderstandings on the part of Watford Electronics. However, with the computer back on my desk, I felt more contented, until I discovered that my hard disc drive disagreed with the new processor. So, I contacted Risc Developments, who were very helpful, and they sent me a new IDE controller ROM. I would recommend that all owners of R.D. internal hard disc drives and RISC OS 3 should get this as it interfaces better with the new operating system and provides a proper space free window.

Unfortunately, I can't do that, as it doesn't seem to work with my system. Everything is fine until it has to cope with a file that is about 1Mb long; this can occur when using ArcFS archives which are treated as one file or when installing Wordworks – the dictionary file is massive! RD are somewhat confused by this as they thought they had fixed it, so my faithful little hard drive must be entrusted to Parcel Force for the hazardous journey to St. Albans.

Therefore, I felt I ought to warn Archive readers with a similar configuration that archiving and WordWorking can be very bad for your general welfare – no-one likes having to wipe everything! The versions in question are: IDEFS v:1.27 and IDEFiler v:1.11 on the EPROM v: 1.33A.

It is, however, nice to see that some companies can be genuinely helpful – notably those who do not also deal with PC products ... Nigel Caplan, Leeds.

• **Indelible files in CFS** – Sometimes, in using Computer Concepts' CFS, a file may become corrupted, and end up on the disc as an indelible file. No direct * command, such as *WIPE, *REMOVE, or *DELETE has any effect. The simple solution is to create another file in Impression or Artworks with exactly the same name as the dud file. On attempting to save the new file, you meet the familiar CC warning message inviting you to delete the old file and save the new one. When you press OK, the dud file is replaced by a nice new file which can then be deleted as normal. Gerald Moxon, Leeds.

• **Inkjet problems on BJ10?** – If you find that the ink stops flowing a short time after installing a new cartridge, and if the self-clean does not work, try removing the cartridge and blowing into the little hole at the side of the cartridge. This trick has worked every time I have tried it and was taught me by a printer repair engineer. Clive Bell, Stevenage.

• **Menu Help** *...continued.* I would like to add a suggestion to the saga about getting menu help, first raised by Gwyn Williams (Archive 6.11 p11), and followed by two articles by Richard Simpson (Archive 6.12 p33 and 7.8 p42).

The problem is that the Gwyn Williams' examples only work for those mythical owners of the new RISC_OSlib, and the solutions suggested by Richard Simpson cause other problems which he referred to last month.

Although I also do not own the new RISC_OSlib, I implemented menu help using Gwyn Williams' solution by including my own function for wimpt_messages.

(1) Add the header reference

```
#include "swis.h"
```

(2) Define a new swi

```
#define Wimp_AddMessages 0x400F6
```

(3) Include the new wimpt_messages routine

```
static void wimpt_messages (wimp_
                        msgaction *messages)
{
 os_regset r;
 r.r[0]=(int)messages;
 wimpt_complain(os_swix(Wimp_AddMessages,
                                        &r));
}
```

I hope this is useful. Peter Tuson, Fleet.

• **Saving the desktop state at shutdown** – After playing with !Help and Switcher's save Desktop file, I discovered an icon that was almost completely out of view. The icon is at the bottom of the 'Desktop boot' save-window below the 'Auto boot' icon. (it can be seen by loading the Switcher templates into FormEd, and altering the window size.) It transpires that it is possible to make the desktop save the current state at shutdown. It all revolves around the alias SaveDesk$File.

By typing

```
*Set SaveDesk$File <filename>
```

the current state of the desktop will be saved, as a desktop file called <filename>, whenever a Shut-down (Ctrl-Shift-F12) is performed, or 'Exit 'is selected from the Switcher menu.

I have been unable to find any references to this in the RISC OS 3 User Guide, so I would imagine that it is not fully implemented, or not recommended by Acorn. Neil Walker, Wymondham, Norfolk.

• **Toshiba CD-ROM drives and CDFS** – I recently experienced problems in connecting a Toshiba 4101 SCSI CD-ROM drive to my system. The problem was that the CD-ROM icon would be displayed on the iconbar but clicking on it, or trying to play audio discs would cause the error 'CD-ROM drive not found.'

I found out that the Toshiba EE50X driver provided with CDFS does not work with this drive, (nor apparently the 3401). Luckily, Morley Electronics sell a new driver for £25 which does work, and so these cheap CD-ROM drives will now work with Archimedes computers.

Apparently, the latest CDFS is v2.21 and hopefully allows drives to be set to double speed, and removes the bug where ejecting an audio disc kills CDFS. Richard Burrell, Bristol.

• **Two dimensional scroll bars** – Here's an interesting 'feature' of RISC OS 3.11. Load up Edit or Impression with a file that covers more than a screenfull. Now go to one of the scroll bars and click on the 'thumb' (the bar) with <adjust>. The pointer will disappear and moving the mouse will cause the window to scroll in any direction – up, down, left and right! Impression seems to do this better than Edit, but any offers why it happens at all? Nigel Caplan, Leeds.

*This feature is part of the normal Wimp-controlled operation of a window. It is particularly useful in graphics programs such as Draw, Artworks and bitmap applications with pages much larger than the window. Dave Webb, NCS.* **A**

# DeskEdit 3

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DeskEdit has more than 150 special key combinations - from Ctrl-F which will take you through your program one procedure or function definition at a time to Ctrl-D which inserts the Date, or Ctrl-( which performs bracket matching. 60 of these use the function keys, and are supported by a high quality function key-strip for ease of use.

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- ★ Basic renumber
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- ★ Procedure browser (lists all procs in a window)
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### A wealth of procedure & function finders

The Browser can list all function and procedure names. If you click on any Browser entry, you will go straight to the corresponding procedure definition - or click with Adjust, and a new view window will be opened on the definition.

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### A single editor for a thousand different tasks

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| | |
|---|---|
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# Risc PC Column

## Paul Beverley

### PCW review

I have had several letters from unhappy Archive subscribers about Ian Burley's Risc PC review in PCW June 1994. The article stated, *"An entry level model with ... (list of features) ... costs £1249. This looks pretty poor when you consider a PowerMac with 8Mb RAM costs about the same."* True, the entry level PowerMac costs £1299 – but that doesn't include monitor or keyboard! I have written to the editor of PCW with my complaint about it.

Since then, Ian Burley has been challenged about this in an exchange on the Arcade Bulletin Board. His reply was that those comments *did not appear in the text he sent in to the PCW editor!* I will make no comment on this.

### Slogan time

Clive Bell of Stevenage suggests we help Acorn by providing some slogans for them. When the PC cards are up and running and Acorn are ready to attack the PC world in earnest, they will have some material ready for their adverts. Clive suggests:

- IBM adaptable
- Microsoft Works, but Acorn Advances
- Acorn Assists Intel Insiders
- Acorn's Window on the World of Windows
- Spend less DOSh on tosh, buy RISC OS

Then his last one was something about rotten apples but it wasn't suitable for adverts!

I don't think we are meant to take Clive's suggestions too seriously but they kept the NCS staff amused. Has anyone else got any suggestions?

### More info on monitors

We have tried out some more big monitors for use with the Risc PC and have come up with some interesting conclusions. The first is that the Eizo 780iW is proving to be a bit of a problem.

When we upgraded from 1Mb to 2Mb of VRAM, we discovered that although the 780iW is OK at 1600×600 in 256 colours, at 32k colours, it is unable to lock onto the signal. The reason is that the horizontal refresh rate for this mode is 56Hz. In theory, the 780iW should scan down to 55Hz but the one we had couldn't cope with 56Hz. The Taxan 1095, on the other hand, still keeps going strong as it can scan down to 50Hz. The Eizo also has difficulty with the special Acorn Replay 'full-screen' mode – it won't lock onto that either.

We are looking at some alternative 21" 0.26mm dot pitch monitors to replace the Eizo. We currently have three 20" or 21" monitors connected to our Risc PC through a four-way video splitter – it looks like a shot from Cape Carnaveral. This means that we can do direct comparisons between the different monitors – and we can be sure that we are viewing them under the same conditions. As well as the Taxan and the Eizo, we are looking at a 'Nokia' and an 'Idek Iiyama' and are trying to get hold of a Phillips Brilliance 2120 (the big brother to the Acorn 17", which is a re-badged Phillips 1720). We will report our findings next month but if you are wanting to place an order before then, just give us a ring and we'll tell you our views to date.

### Supply of Risc PCs?

We are getting quite a few machines through now but they are virtually all ACB15s and ACB25s and we haven't seen very many AKF85s. I gather from other monitor suppliers that Phillips monitors are like the proverbial hen's teeth at the moment. Although Acorn say, "It's OK, we have a contract with Phillips", the fact is that we still haven't seen many AKF85s coming through.

As far as ACB45s are concerned, we haven't even had enough to supply all the orders that were placed on the *first day* after the launch. I don't know why there should be such a delay on these compared with the other two models but obviously we'll get them out to you as soon as we possibly can.

(One possible theory is that the supply of slices may be very limited; Acorn would then make ACB15 and 25 computers because they can make two of those for every one of the ACB45s. Certainly, Atomwide say that Acorn are quoting the 10 weeks for the supply of extra slices for use in their 2-3 and 2-4

slice upgrades and, despite ordering quite a number of 1-2 slice upgrades from Acorn, we haven't had any at all through yet. But this is just a guess – it may be that they can't get 420Mb IDE drives!)

If we have problems with getting the 17" monitors, it is possible that we may be able to supply an alternative (and, I think, slightly better) monitor at the same price. (In fact, there may even be about £30 change!) But we'll have to see how things go in the next two or three weeks. If you would be interested in changing your order, give us a ring.

What we do actually have is a couple of ACB15s in stock now if anyone is interested. The trouble is that if you want to upgrade them to ACB25 standard, they don't work out such good value. If you buy an ACB15 at £1468 and add a 4Mb SIMM (£145) and a 1Mb VRAM (£130), that comes to £1743 instead of £1644 – £99 more than an ACB25 – mind you, you end up with a 7Mb computer instead of the 5Mb of the ACB25. If you are in a hurry and want to upgrade either of these ACB15s we have in stock, give us a ring. (For anyone going for an ACB25 with 2Mb VRAM, the price differential is not as big: £1644 + £110 = £1754 compared with £1468 + £145 + £200 = £1813 so that's only £59 extra for a 7Mb machine instead of a 5Mb.) A

# Risc PC Column

## Keith Hodge

A new machine and a new editor who is going to be stumbling (like most new owners) through the learning curve, which we all face, no matter how small the change of machine or operating system. For me, it will be a very large change, because my present machine is an ARM2-based A305, which has grown over the years to become a 4Mb RAM, 245Mb SCSI hard disc, MEMC1a, VIDC-enhanced, RISC OS 3, NEC multisync 14" system.

### Why have I changed machines?

I regularly used mode 108 to allow an A3 landscape electronic drawing to be visible in its entirety on screen. However, in this mode, the machine was so slow that if I attempted to perform any other tasks whilst redrawing was taking place, it was impossible to achieve any real gain in productivity, plus, with only 4Mb of RAM it also ran out of application memory far too easily with today's larger programs.

### My new machine

I have gone for the largest machine, i.e. ACB45 with 8Mb DRAM, (upgraded to) 2Mb VRAM, 420Mb HD, PC card, and a 17" Acorn Monitor. But please do not be put off from writing to the column if you have only a base machine – many of the problems will be machine-size independent, and for any that are not, I can soon absorb the surplus DRAM in a RAM disc, and I am sure someone will provide the utility to disable some or all of my excess VRAM, thus allowing me to simulate a base or 1Mb VRAM machine.

### Column objectives

These are very early days in the life of the machine and I do not think it would be very wise to set out concrete objectives, as nobody can really begin to know what the machine is capable of, or what some of those amazingly clever people who have provided such things as colour cards, SCSI interfaces, Laser Printer Cards, etc for the Archimedes, are going to produce for us all. I do however feel that, at first, there will be a lot of minor incompatibilities to be overcome, and I hope that the column will be able to compile an index of problems and solutions, plus possibly a support disc or two, containing these fixes, thereby saving much heartache.

### Next issue

I will, in the next few weeks, be transferring all 167Mb of my software to the new machine – by 800Kb floppy disc! *(Worth investing £53 on RemoteFS? You could sell it on afterwards via the Small Ads. Ed.)* Then I will be fitting my Brainsoft Video/Sound card, HCCS SCSI card and 245Mb hard disc so that, when funds allow, I will be able to add an HP colour flatbed scanner thus enabling me to import images from camera and scanner. I will report my success or failure and also hope to be able to give details of what power connectors etc, are provided with my machine for powering extra floppy and hard drives, as I have an immediate need

for a 1.2Mb 5¼" floppy drive. Will all this be without problems?

### Tailpiece

This column will, I hope, develop along the lines of the PipeLineZ column. By that, I mean that it will become a focal point for information and ideas, relating to all aspects of the Risc PC, and for that to happen, it will require feedback from users, about how things are working on the new machine, and also about what they want – without this type of feedback, software and hardware developers will be working in the dark.

I can be contacted by letter at the HES address on the inside back page, by telephone after 7p.m. and by Packet Radio from anywhere in the World, as GW4NEI@GB7OAR.#16.GBR.EU. A

# Oxford Reading Tree Talking Stories

## Dave Walsh

Many schools will be more than familiar with these charming and interesting characters already. Sherston have managed to take a popular formula from the early reading world and transfer Roderick Hunt's stories successfully to the computer medium, with the aid of Hannah Gordon's narration and the original animations by Alex Brychta.

The discs each contain one complete book along with a primary style font (Pipkin medium) and !System. The documentation claims that initial problems with RISC OS 2 have been addressed so the books work on older, non-upgraded A3000s.

The six books cover the whole of the second stage. Somewhat disappointingly, the books are not to be included in the pack, although there is a precis of the philosophy behind their use in the teacher's notes. This lack of books will be only a minor irritation to schools already using the Oxford reading tree materials, but will diminish its usefulness in homes – after all, they are designed to encourage reading of the printed material!

Having said that, the books are delightful, following the exact script of the reading scheme but extending the humour and anticipation with sound samples, animation and the human voice. Each page can be read as a whole, or have children pointing at the individual words can have them spoken. The animations are quite endearing – Floppy waving his tail as you hear the squelch of the mud or all the toys waiting for Kipper's unique brand of home cooking.

Sherston have obviously learned a great deal from their Naughty Stories Volumes one and two. The Oxford reading tree materials are far more polished. An example of this is the backup of keywords, in context, after hearing the story all the way through. Each word is shown and spoken by itself and then shown in its place in the story. Another feature is the dual "listen" icon where the user listens to one part of the page and then has the choice to move on to the second part or re-listen to the first.

The program loads a great amount of compressed data between pages so does run a little slowly. A tip here is to load the program into a RAM disc, if you have the memory, making the page turns almost instantaneous, although you will still need the "key disc" in the drive. Another problem I have encountered with the series is connected with other programs turning the sound channel off, leaving the reading books speechless!

As with most Sherston products, there is a configuration menu that allows the user to determine the overall volume and whether individuals have access to the whole sentence "read out" option. Configuration of highlighting colour schemes has been also considered. A log file will record which words children have selected individually. An enhancement from the Naughty Stories range is the ability to have the whole story read to you automatically either at a slow or fast speed.

As an extra resource for schools already using the Oxford reading tree, these books have to be thoroughly recommended as an effective teaching aid. Even without the printed material, they have a great deal of potential, combining a structured approach to reading, with the sound, speech and special animations provided through the computer.

Oxford Reading Tree Talking Stories cost £39.95 +VAT from Sherston or £44 through Archive. A

# Copyright Issues

**Michael Wright**

In his Multimedia Column (7.8 p17), Paul Hooper asked for help on copyright. Although my day-to-day work is mainly concerned with probate and trusts, one of my hobbies is music and for many years I have acted as adviser to an amateur charitable association on copyright law. In this capacity, I have written articles, and given talks and hosted question and answer sessions at seminars in various parts of the country.

### General

To start from basics, what is copyright? It is a concept which recognises the need to protect the livelihood of those members of the community who are gifted with creative abilities, whether they be painters, writers, composers or whatever. Copyright gives them a property in what they create. Where the right exists at all, it arises automatically without the need for registration or any other action by the creator or owner. It is, in essence, concerned with the negative right of preventing the copying of physical material existing in the field of literature and the arts and gives the owner the exclusive right to control the 'work' in question, to do and to authorise others to do certain acts centred round the reproduction and performance of the work.

Quite simply, copyright is the right to copy – but copying is very widely defined to include not only copying in the usual sense but also performance, recording, broadcasting, etc. The owner is the only person who can copy the work; if you want to do so, you must obtain his permission first. He may refuse his consent; he may grant it subject to any conditions (reasonable or unreasonable) he chooses to impose; and he may charge for it. It is his work and the law gives him this right. Copying without the consent of the owner is variously referred to as plagiarism, piracy or infringement of copyright.

### Sources

The modern law of copyright is contained in a code of statutory provisions as interpreted from time to time by judicial decisions. The first copyright statute – indeed the first in the world – was the Statute of Anne in 1709. The present UK statutory code is contained in the Copyright, Designs and Patents Act 1988 (price £12.50 from H. M. Stationery Office) which came into force on 1st August 1989. The Act contains descriptions of three broad categories of works which are protected:

- literary, dramatic, musical and artistic works;
- sound recordings, films, broadcasts and cable programmes;
- the typographical arrangements of published editions.

Note that literary and dramatic works are not limited to the usual books and magazines, but cover virtually every form of written communication, even private correspondence. However, copyright does not protect an idea. What is protected is not original thought or information, but the original *expression* of thought or information in some concrete form. Consequently, it is only an infringement of copyright if you make use of the form without consent; you would not be liable if you took from the work the essential idea, however original, and then expressed that idea in your own form, or used the idea for your own purpose (unless perhaps the work has protection under patents law).

Note also that it is only breach of copyright to copy a *substantial* part of a work. So what is substantial? This is where the fun starts. It has been held to be a qualitative description not a quantitative one. And it has been more robustly said, that if something, however small, is worth copying then it must be worth protecting!

### Ownership

Who owns the copyright? The general rule is that the *creator* of the work is the first owner of the copyright in it. For instance, this would be the author of a book or article, the composer of a piece of music, the artist in respect of any drawing or painting, the photographer in the case of a photograph, etc. The main exception is where the work is created in the course of your employment, when your employer will normally own the copyright and not you.

Copyright, being *property* the same as a car, a house or a computer, can be transferred. A copyright owner can sell his copyright, give it away, grant a licence to use it, and generally deal with it in any way he chooses – it will also pass on his death to his next of kin or to the beneficiaries named in his will.

### Duration

The standard copyright period is the life of the creator plus 50 years. In other words, copyright in a work lapses at the end of the fiftieth year after the year in which the author/composer/artist died. There are exceptions, but most are of limited effect, although there is one which may be of more general interest to computer users.

There is a separate copyright in a typographical arrangement – this is to protect a publisher who may have gone to considerable trouble in setting up matter in type and publishing it. It protects me when I typeset old music: the music itself is public domain, but anyone copying it breaches my copyright in the typographical arrangement. This protection lasts for a flat period of 25 years from the date of first publication. Under this provision, Paul has copyright in the printed page of Archive, quite independent of any copyright in the material on that page.

### Illustrations

This brings me neatly to the first of the specific queries raised by Paul Hooper. He asks what the position is if an author illustrates a point with a graphic taken from a contemporary source. Is it covered by copyright? Even if the original graphic (Paul refers to a historical broadsheet) is itself out of copyright – i.e. older than 50 years from the death of the creator of it – the answer is still probably, yes. There are two main reasons. First, someone presumably photographed the broadsheet, so copyright subsists in that photograph. Secondly, to photocopy or scan the reproduction will also breach the publisher's copyright in the typographical arrangement of the publication. These are, of course, in addition to the author's copyright in the actual text.

This concept of multiple copyright is guaranteed to make the newcomer reach for the valium. If it's any consolation, it is even worse in the music field where performing right and sound and visual recordings often make it difficult to pick out the trees from the wood.

### Copying from old publications

The copyright aspects of copying (by any means, even by hand) from books now out of print or from newspapers that are no longer published is straightforward – in theory. If the publication is over 25 years old, you are free of the publisher's copyright in the typographical arrangement; but you are not free of the author's copyright in the text or the artist's copyright in the illustrations, which, if they were employees, may belong to their employer.

If the creator is dead, when did he die? To reproduce his material in any way, you need the copyright owner's permission. If you cannot trace him, it would be scrupulous to include an acknowledgement in any use you make of his work, something on the lines of: "Every effort has been made to trace the owners of copyright material, but I would welcome hearing from any I have missed." There are exceptions, basically copying for your own private use, fair dealing for the purposes of criticism or review, fair dealing for the purposes of research or private study; and there are various exemptions connected with educational use.

If the copyright is owned by a company which has since gone to the wall and been struck off, you are probably home and dry. Unless the copyright is very valuable, it is highly unlikely that the creditors will consider it worthwhile resurrecting it just to recover a few pounds in royalties. However, if a company were taken over by another, such a transfer would normally pass all assets, which would include copyrights and other intangibles.

### Museums

The column also enquired about articles in national museums. The normal copyright rules apply to the article themselves – has the creator been dead for over 50 years? Subject to this, you commit no breach of copyright by photographing or videoing them. You may, of course, fall foul of the museum's own rules and be in breach of contract with them (the National Trust, for instance, bans photography in many of its properties).

### PD libraries

If you use something from a PD library which is subsequently discovered to be not in the public domain, both you and the library are liable – as

copyright is a proprietary right, ignorance of ownership is no excuse for infringement. However, under Section 97(1) of the Act, it would be a defence to a claim for damages to show that you did not know, and had no reason to believe, that copyright subsisted in the work. The onus would be on you to establish this – but the authorities indicate that it is not at all easy to bring yourself within this section. Your main protection is that the copyright owner will in practice be gunning for the PD library to prevent further infringements.

**Organisations**

Paul Hooper finally mentions the Scout Movement. Probably what he has in mind is that organisations are quite likely to negotiate a copyright licence which will cover use by any of its members. This could be on the basis of a blanket fee, which they may or may not seek to recoup by charging their members, or it may be on the basis of agreeing a fixed fee for each use which they collect and periodically pass on to the copyright owner. Either way, it is a convenience to the user who does not have the hassle of getting individual consent, and to the copyright owner who probably does rather well out of it, given that if it was left to individuals, most would not bother to apply for consent.

**Further reading**

The British Copyright Council is always very helpful over copyright matters and they publish several booklets which are easier going than fully-fledged legal textbooks. They are at 29/33 Berners Street, London, W1P 4AA.

*Although the material in this article is believed to be accurate, it is of necessity an outline only and not complete. You are strongly recommended to seek legal advice on specific copyright problems and not to rely on general statements of the law in governing your affairs.* A

# Games Column

## Dave Floyd

Following my lamentations about Gateway To Karos not being converted for the Archimedes, I was very pleased to receive a letter from Joyce Haslam, the wife of the game's original programmer. Joyce is currently in the process of converting the game to RISC OS and Acorn have kindly given their permission for it to be released into the public domain on its completion. Once Karos has been finished, Joyce is then intending to convert Mirror Of Khoronz, the sequel which has not previously been released. I certainly wish her the best of luck with this project, a sentiment which will be echoed by many Archimedes owners, and look forward to seeing the finished article. Maybe this would be the time to ask publicly why nobody has converted The Seventh Star, another seemingly forgotten Acornsoft text adventure.

Judging by the mail I have received, there does seem to be quite a bit of interest in text adventures amongst the Archive readership. This is slightly puzzling as the genre would appear to be a commercial no-go zone judging by recent releases, which usually signifies low sales. It is possible that with its highly technical content, Archive attracts a more intellectual readership than most other magazines. *(Flattery will get you nowhere! Ed.)* Maybe the answer is that, with the exception of the Mad Hatter column in Acorn Computing, text adventures are ignored by the rest of the Acorn press, and this has inspired adventure fans to put toner to paper in order to encourage me along those lines. Following the response, I intend to devote a future column solely to text adventures on the Archimedes, but what about the rest of you? Don't forget that while video may well have killed the radio star, apathy is the true enemy of all forms of artistic expression. Write to me. I know you are out there somewhere.

Finally, on the subject of text adventures, I mentioned before that, given the memory and disc capacity of the Archimedes, it would be possible to write a very large and absorbing adventure game. While the task may be too time consuming and daunting for one person to attempt, it would be by no means an impossible project if enough people collaborated and pitched in ideas towards that aim. I therefore throw down the gauntlet to the Archive

readership. Do you have any ideas for an adventure game? If so, whether they be puzzles, maps, scenarios or whatever, please let me know and I will try to coordinate them all into a coherent whole. If the interest in this is out there, who knows what may come of this? We may be able to raise some money for the Archive charity pot as well as producing the world's biggest adventure game.

**Pinball games**

It has been pointed out to me that I didn't mention pinball games in my summary of the Archimedes games scene. The reason I stepped around it was that there is, to date, only one – ArcPinball. This was released in late 1990 by Shibumi Soft and has subsequently been re-released by Superior Software as part of Play It Again Sam 2. While its mathematical algorithms were good and therefore the angles that the ball bounced at were perfect, the playing area was woefully small and the only justification for it being the best Archimedes pinball game is that it remains to this day the only one. Perhaps Krisalis or a company of that ilk would consider converting one of the pinball games from the Amiga/PC marketplace or maybe 4th Dimension may like to channel Gordon Keys' not inconsiderable talents towards producing a home-grown pinball game that does justice to the capabilities of the Archimedes.

**Risc PC**

I read the Archive supplement from last month's issue with much interest (and not a little longing) and only have one query on what would appear to be an excellent machine. Bearing in mind its almost limitless expansion capabilities, at least within the bounds of reality, why is the VRAM limited to just 2Mb? This seemed inconsistent to me when the main RAM in the machine can theoretically be upgraded to a truly mind-boggling 256Mb. I am sure there is a good reason for this which will become clear over the next few months but as nobody else seems to have questioned this, I thought I would take this opportunity to do so.

Acorn's launch also started me thinking about how the new machine could affect the Archimedes games market in the future. Having put together a rough draft containing my thoughts in this direction, I received a letter from Neil Dickson which, by a rare stroke of luck, coincided with much that I had written. I have therefore taken the opportunity to combine both our lines of thought in the finished article, and thank Neil for his contribution.

While not everybody will need the power and expansion capabilities of the new machine, over the next couple of years it is certain to be very popular and I think that, in two or three years from now, the majority of Acorn owners will have Risc PCs rather than Archimedes. With the extremely competitive pricing of the 486 card with the machine, I also feel that most will buy one at the same time, opening up the option to purchase IBM PC software. It is also perfectly feasible, given the open architecture of the new machine, that somebody could license the rights from Sega to supply an add-on that provides Sega Megadrive emulation. Risc User may have broached this subject as an April Fool spoof recently but, bearing in mind that Amstrad launched a combined PC and Megadrive system a while back, it is not as unlikely as some may think. The time has most definitely come for those software houses producing native Archimedes software to wake up to the big wide world and raise their standards which, at present, fall only too often into the realm of mediocrity.

There are, however, positive aspects to the Archimedes games market. There are a relatively small percentage of games released that are truly not worth the price of the discs they are duplicated on, possibly as low as 20-30%. My estimate for the PC and Amiga markets would be in the region of 60-70%, so, in that respect, we are lucky. However, not including conversions from other formats, there are very few games that would sell in any great numbers on other platforms. It has been seven years now since the launch of the Archimedes along with Zarch which was, at the time, a ground-breaking start and a game which should have inspired developers on to far greater things that would have made games players everywhere aspire to owning an Archimedes. Unfortunately, it was not to be.

How many readers of Computer & Video Games, an all formats magazine, will be beating a track to Acorn's door after their recent headline over a review which stated, "Who said 32-bit games had to be good? Check out this awful Archie effort!"? The review was rounded off with a rating of 10%. What

makes it worse, to my mind, is that they were not referring to a game by a one-person operation launching their first tentative steps into the software market with a budget-priced release, but to The Crystal Maze from Sherston. Is this game really as bad as all that? I have not seen a bad word written about the game in the Acorn press.

The time for complacency is gone and if the Archimedes games companies are to continue trading in the face of direct competition from large corporations with huge resources, they will have to mature quickly and produce games that are better than the opposition, something which I feel Acorn have always done with their hardware. Sound and graphics alone do not make a good game but, with the capabilities of the Archimedes, top quality sound and graphics should be a minimum requirement for any game released at over, say, £10£-15. By that I do not mean to imply that a cheap price tag is any excuse at all for poor quality. Also, the Acorn press must realise that blindly praising every Archimedes release regardless of its relative values in the wider computing world is, in the long term, damaging. It benefits neither the customer nor the games developers for whom a little constructive criticism could reap great rewards.

Any comments relating to this column, or any other games-related subject should please be sent to Dave Floyd, c/o PO Box 2795, London NW10 9AY. A

# Advanced Basic Column

## Paul Hobbs

### Bit manipulations

When a flag variable is required, for example a user choice as to whether interactive help should be provided, I suppose the first instinct of many programmers is to use a line like:

```
IF <some condition> THEN help_on% = TRUE
                    ELSE help_on% = FALSE
```

This has the advantage of being readable. However, 32 bits are being used when one would do. Normally, this is hardly a problem but when there are many flags to be saved in a choices file, it would be much faster to use bit flags (remember that many users have no hard disc!). In addition, bit manipulation is an important technique which is needed quite frequently when making SWI calls.

Bits can easily be set, cleared, toggled and tested as follows:

```
word% = word% OR (1 << n)  :REM Set bit n
                                of word%
word% = word% AND NOT (1 << n):REM Clear
                              bit n of word%
word% = word% EOR (1 << n) :REM Toggle bit
                               n of word%
IF word% AND (1 << n) THEN ... :REM Test
                              bit n of word%
```

A practical example would be to read the '3D' flag bit held in the CMOS RAM to discover whether 3D or 2D templates should be used by your applications. Routines have been published in the past to detect if !NewLook has been run (by looking for certain system variables or modules), but this will probably not work on a Risc PC, or in situations where the bit has been altered by other programs.

Acorn have taken the trouble to reserve a bit in the CMOS RAM to denote whether the user wants to use 3D icons, so it seems to be a good idea to read the state of it, if you are considering allowing a choice of templates. I should point out that this particular bit was used for something else under RISC OS 2 and so, to be totally correct, you should only use this routine if you have already checked that RISC OS 3 is installed.

It is certainly a nice touch to provide both 2D and 3D templates and sprite files. If I had to work all day long on a slowish Archimedes, I might well appreciate being able to use 2D templates to speed things up a little. In addition, 2D dialog boxes can usually be smaller which is useful when using a lo-res screen mode.

```
REM Test program to see if 3D bit is set in
REM CMOS RAM (i.e. !NewLook has been run,
REM the lucky user has a Risc PC etc..)
REM read value of word at loc 140 of CMOS
                                RAM..
```

```
SYS "OS_Byte",161,140 TO ,,val%
REM and test bit 0..
IF (val% AND 1) THEN _3d% = TRUE ELSE _3d% =
                                        FALSE
PRINT _3d%
```

IF _3d% is TRUE, i.e. (–1) then 3D templates should be loaded if available. To be really slick, the applications could check the value of the bit at every mode change and load new templates if required but this is probably difficult to arrange. Most users will choose a setting and never change it again.

### More on messages

I have received a letter from Matthew Newton regarding the piece on messages in RISC OS in the May issue. He asks about how exactly one sends what might be called a 'custom' message (i.e. one that contains data in a form that you can specify) from one application to another which opens up many exciting possibilities – one such would be to send debugging messages from one application to another for display.

To send a user message, all that is required is to pick an unused message code, build the message block (maximum length 256 bytes, although multiple messages could be sent) and then broadcast the message using SYS "Wimp_SendMessage". As the message is broadcast it will be received by all running applications but, as it has an 'unknown' reason code, it will be ignored by all but the applications that have been written to respond to it.

For this example, I have chosen a reason code of &43B00 which was used by the StrongEd/ StrongHlp applications at one time. Almost any unused reason code will do for your own programs, but if you intend to release your applications to a wider audience, it is important to write to Acorn and request that a reason code be allocated to you.

The monthly disc includes these two simple applications, one of which allows the typing of a text string into an icon, and a second one that displays the string (i.e. the basis of the debugger mentioned above).

The core of the demonstration applications is as follows – to send the message (when OK is clicked in !Proggy1) the following code is required:

```
DEF PROCMessageSend(message$)
LOCAL msg_blk%,m_len%
m_len% = (LENmsg$ + 24) AND NOT 3
   REM the message length must be a multiple
   REM of 4, AND NOT 3 ensures this
msg_blk% = FN_heap_get(m_len%)
msg_blk%!00 = m_len%:REM Size of message
msg_blk%!12 = 0  :REM your_ref (0 = original
                          message not a reply)
msg_blk%!16 = &43B00 :REM User message
                                  reason code

REM the 'data' part of the message is simply
REM a zero terminated string in this case..
$(msg_blk% + 20) = msg$ + CHR$(0)

REM send message with reason code 17
REM (UserMessage, no reply required)
REM the 0 passed as the third parameter
REM means broadcast to all tasks..
SYS "XWimp_SendMessage",17,msg_blk%,0
PROC_heap_release(msg_blk%)
ENDPROC
```

To receive the message and display it (as in !Proggy2) :

```
DEFPROCmessage
LOCAL msg$
REM called from Wimp_Poll loop when reason
                    codes 17 or 18 detected..
REM bk% is the block containing the data
                      returned by Wimp_Poll..
CASE bk%!16 OF
 REM handle other reason codes here...
 WHEN &43B00
   msg$ = FNstring(bk% + 20)
   IF LEFT$(msg$,8) = "Proggy2:" THEN
     msg$ = MID$(msg$,9)
     PROCshell_IconPut-Data(mainw%,0,msg$
                                      ,TRUE)
   ENDIF
ENDCASE
ENDPROC
```

Once again, I have assumed that routines are available to claim and release a block of workspace memory.

I have used a prefix of "Proggy2:" on the messages sent from !Proggy1 to !Proggy2 as a means of denoting who the message is intended for (the messages are broadcast to every task, remember).

!Proggy2 will only respond to messages of type &43B00 that start with "Proggy2:". This means that only one reason code is needed for all messages sent between these applications.

A much more sophisticated system of user messages is available in the form of the Computer Concepts Impulse module but the scheme outlined above is sufficient for most purposes. For those who are interested, the monthly program disc contains documentation and examples of using ImpulseII.

Any questions or comments about Basic programming would be gratefully received. Please write to Paul Hobbs, Rheinpfalzstrasse 2, 85049 Ingolstadt, Germany. A

# Pocket Book Column

## Audrey Laski

### Warning

In the last Pocket Book Column, I boasted of having killed an application with my bare hands, or rather with the use of "Kill Application" in the applications menu. I now have to report that this piece of magic does not always work. In the course of trying out various programs from the 3-Lib collection, I set up a little game called Snake. I was irritated to find that copies of it seemed to be proliferating, so I tried first to Delete and then to Kill it. Killing appeared to work, but every attempt to delete the file produced the message that it was still being run. John succeeded in stopping it from scattering copies around, and I have had to settle for letting the file sit still in the APP directory, hoping it has no more tricks up its sleeve. I don't recommend anybody to lumber their Pocket Book with this tiresome little program, especially as its maker identifies himself as 'Nick'.

### 3-Lib programs on the PocketBook

On the other hand, many of the other 3-Lib programs make brilliant additions to the Pocket Book facilities, and I can now join John Woodthorpe of Rugby in heartily recommending the package; like him, I have had to invest in a flash SSD to expand my memory to take in all the goodies I want to use. I'm particularly taken with a fiendish Solitaire and an excellent thought organiser called Outline; there's a tree program which makes it easy to see all one's directories and their contents – highly desirable when expanding them so much – and an opo/a disassembler, REVTRAN, which John of the far side of the bed is exploring and will report on soon.

He writes, 'The PocketBook's ability to cope with applications on any drive without bothering the user is one of its operating systems' most agreeable features.'

### Dunce's corner

However, one does have to co-operate properly with it. For some time, John could not get Solitaire to work from the flash disc(A). Poor communications: I'd originally installed Solitaire and put its auxiliary file, cards.fon on the opd directory in M without letting John know, when he transferred it, that there was an auxiliary file. Solitaire would only work – as the ReadMe did tell him when he checked up – if this file and the application file were on the same drive. When two people work with the same machine, information has to flow.

### Adventures in printing

We are about to take off for a month in Europe, and have acquired a portable printer (the BJ-10SX) which connects to the Pocket Book. In accordance with Murphy's Law, the printer didn't work when we got it, and has only just returned to us after a lengthy convalescence, so we have barely begun to experiment, but it certainly does seem to be printing out Pocket Book files quite happily. I'm hoping to have half a novel not only on disc, but on paper too by the time we get back; I'll report on any interesting peculiarities.

### Endnote

Hardly any correspondence this month: only a letter from Alan Mothersole of Bracknell who draws attention to some useful advice on transfers in the A-Link manual and mentions reasons why he has bought a Psion 3a rather than a Pocket Book. This suggests again that any substantial newsletter or magazine ought to cover both marques. A

# Colour Scanning Revisited

**Jim Nottingham**

Following the article on Irlam Instruments' colour scanners (Archive 7.7 p59), a number of readers responded with queries, comments and some invaluable advice, so this is a resumé of the correspondence, in the hope we may all learn from others' experiences. Not all of it is specific to the Irlam solutions, nor limited to scanning in colour. Thank you to all who contacted me – especially the few who sent an SAE!

The most common query was "Are there any alternatives to the Irlam Instruments' colour scanners?" The familiar names which came up were Integrex and Canon, the second in conjunction with Twain and ImageMaster. Richard Readings has taken the latter route and has sent a most interesting and useful report, reproduced below. *(Comments in italics are my own. JN)*

Richard writes: "I recently purchased a Canon IX-4015 scanner *(a colour version of the one used in Computer Concepts' Scanlight Professional package)*, together with a copy of David Pilling's ImageMaster software and Twain driver. I wanted an A4 flatbed scanner that could potentially be used on a computer other than Acorn, at a reasonable cost. Colour was optional but seems to cost little more than greyscale devices now. The compact footprint of the Canon was an important consideration. A PC interface kit and software are available, though they're quite expensive.

"The scanner, with Twain driver, worked at the first attempt on my Cumana SCSI interface, and the scan times seem short compared to the PC set-up I have been used to. The only niggle I have with the scanner is that it only has one 'proper' SCSI connector (the big one, rather like a Centronics printer connector – referred to as an Amphenol connector). The other connector is a 25-pin D-type. I had to get a special cable made up so that I could daisy-chain it with my SCSI disc. Integrex were very quick to supply both the scanner and the special cable when I requested it. *(No, that's not a typo – Integrex do sell Canon scanners as well as their own – and they sell Canon and HP printers as well as Integrex ones! Ed.)*

"The initial preview scan is very quick, and high resolution (400dpi) A4 mono scans are almost as fast. *(The way ImageMaster first completes a Preview scan, prior to doing a high-resolution scan of a user-selected area, is near-identical to the method used by Irlam's ProI-mage software.)* The image is not displayed until the scan is complete. But colour scans, particularly 24-bit, are considerably slower. The scan itself still seems relatively quick, and most of the time seems to be taken processing the raw data image for display on the screen. Reducing the resolution and minimising the image area scanned in colour makes a big difference. *(It's just the same with ProI-mage. Large, 24-bit colour scans run to megabytes of raw data and, depending on available memory, seem to take ages to process, compress and move to the storage medium.)* My own use is mostly high resolution mono scans and, for this, ImageMaster works well.

"ImageMaster has a user interface rather like Art-Works, with floating tool and info panels. I personally prefer the Windows' style ribbons but that's just a quibble. I would prefer to have a direct scan button (as well as F10) to open the image acquisition window. *(See Keystroke comment below.)* There is a useful print option that can provide an A4 copy of the scan, though it makes a rather slow photocopier with a DeskJet! *(This is a delight on Laser Direct; fast and very convenient, just like the Photocopy facility on Computer Concepts' Scanlight software.)*

"It is possible to save images in various formats, including TIFF, with various compression schemes. These appear to be compatible with the PC world, and I have used CCITT compressed TIFF files extensively to transfer images to Xerox Textbridge for character recognition on a PC. It's also possible to specify which mode to use when saving sprite files. For example, I have configured ImageMaster to save mono scans in mode 18 so I can transfer them directly to Sleuth. Only occasionally does my input produce useful results with Sleuth, but I look forward to the projected new release, with improved character recognition and direct scanning via the Twain driver. Having to transfer images to a PC for OCR purposes is a pain, but Textbridge puts Sleuth to shame, for just twice the cost.

"ImageMaster provides a wide range of filters etc, but the version I have (1.01) lacks an undo button. This makes it difficult to do anything useful so I have little to say about this area currently. I have been promised an upgrade to a new version with this facility as soon as it is complete. *(V1.03 is now available with Undo/Redo and various bug fixes.)* Those image operations that I *have* attempted seem slow on my A420/1 (with ARM3), but I'm used to doing such things on a Unix workstation which costs rather more than an A420! *(with 16 times the memory....).* A useful feature is the ability to configure ImageMaster to single or multi-task during long operations, or even blank the screen for maximum performance.

"I have found that ImageMaster is liable to crash from time to time, occasionally hanging the Archimedes and necessitating a reboot. It will be interesting to see if the upgrade (with the "undo" button) will improve things.

"When I have had to retouch scanned images, I have had to resort to Paint, but I find this very limited.

"In conclusion, I have no complaint about the Canon scanner and although ImageMaster is currently a little rough round the edges, it shows considerable promise. What is needed is a combined scanning/image processing/retouching program, like Photoshop, but cheaper!" Richard Readings, Wokingham.

Having recently had an opportunity to use Twain and ImageMaster in conjunction with my Epson 6500, I would agree with everything Richard has said about the excellence of Twain and the limitations of ImageMaster v1.01. We have now received v1.03 which is looking good but, at the time of writing, neither of us has had an opportunity to give it a thorough check-out. One particular feature struck me as being especially valuable; David Pilling confirms that the software brightness 'control' works with the Canon IX3010 monochrome scanner as used by Scanlight Professional which does not have the brightness control and which, as a result, I found virtually unusable.

Regarding my Keystroke comment in Richard's report, I've set up a Keystroke hot-key combination (ALT-Copy) which, whenever I want a quick photocopy of something, loads Twain and ImageMaster, opens the image window, initiates an A4 scan and prints the result, mostly in the background. OK, I have to remember to first put the document to be copied in the scanner(!), but what more could a chap want?

As we have come to expect with anything from the Pilling stable, Twain and ImageMaster represent remarkable value for money, particularly if bought under David's introductory offer. He is being his usual very helpful self in listening to customers' requests and smoothing off the 'rough edges'.

However, I would like to play devil's advocate here and throw up a warning flag. In theory, it would be possible to put together what, on the face of it, could be a *very* cheap scanning system, by using Twain/ImageMaster to drive a monochrome or colour scanner bought from a deep-discount 'box-shifter'. Personally, I would strongly advise *against* taking this route as it would be quite unreasonable to expect David Pilling to support the hardware elements of the system (including the all-important interface) should there be problems and, from my experience, Acorn, Epson, et al are unlikely to support something which they do not see as their specific 'part of ship'. SCSI interfaces seem to be the weak link. You may be as lucky as Richard was but, for example, if the scanner doesn't work on your particular set-up, who's going to fix it?

I know that Richard agrees with me on this one and he elected to get a complete package from Integrex who, it appears, have been both knowledgeable and helpful. Similarly, I've had splendid service from Irlam. I have my own (unprintable) thoughts on which box-shifters to avoid; no doubt Ed will advise in particular cases.

Having now used both ProI-mage and Twain/ImageMaster to drive my Epson 6500, do I have a preference? To this, I would 'say' horses for courses", or "yer pays yer money...".

Irlam's ProI-mage has been around for a good while, is an *extremely* capable and stable package which very effectively supports a good range of colour scanners – but it doesn't come cheap and there are some limitations, albeit minor ones. (To be fair to Irlam, we can expect to see their prices dropping

shortly because market forces, such as increasing interest, falling scanner prices and economies of scale, allow them to pass on savings to the customer.)

David Pilling's Twain and ImageMaster are relatively new runners with some residual rough edges but are exceptional value and, between them, support a fair range of monochrome and colour scanners (expanding all the time) *and* offer post-scan processing facilities. Scanner/interface support could prove a problem unless you have confidence in the package supplier.

### To dither or not to dither...

Now to cover a few more readers' queries. In each case, I have taken advice from one or more experts and will try to give a resumé. Firstly, and specific to ProI-mage, should Dither be switched on or off? The user manual says that, normally, Dither should be switched on for best screen presentation. However, you should switch Dither off if you are converting images to monochrome using ChangeFSI or, more importantly, printing (as it will clash with the printer driver halftoning). Invariably, I will be printing the scanned image, so I have Dither switched off as a default.

### Scanner resolution

There has been considerable confusion and discussion over scanner resolution. Although, for example, my Epson 6500 is advertised as a 1200 dpi machine, the *optical* resolution of the scanner is actually only 300 dpi and the higher resolutions are synthesised by software processing as the scan progresses. In principle, this feature seems to be common to all scanner/software systems, the major differences being the optical resolution of the scanner (which may be quite different in the horizontal and vertical axes) and whether, when resolutions higher than the scanner's optical capability are required, synthesising takes place within the scanner itself or by the image processing software during or after the scanning process.

One reader raised this point with regard to image storage, the gist being that high-resolution scans, even in monochrome, can quickly eat up disc space. He recommended initially scanning and storing a low-resolution image, subsequently processing to high-resolution immediately prior to printing. My own feeling is that this is quite valid for a one-off print but that the hi-res image could not be exported to other applications (e.g. DTP) or saved for future use without negating the original savings.

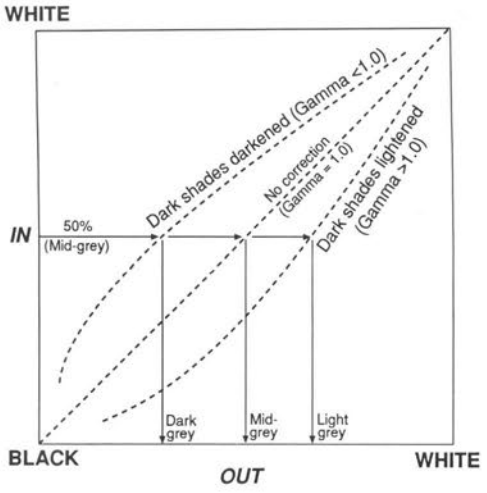
### Gamma correction

I've left the difficult one until near-last... There were numerous queries along the lines "What is Gamma?" and "What Gamma correction should I set?". I received reams of extremely complex explanation and advice from the experts on this one but readily admit that, as a non-techie user, I failed to understand virtually all of it. So on the assumption that those who sent in the queries are in the same boat as me (otherwise they would probably know the answer), and at risk of offending the experts, I will try to give a much-simplified picture.

As an end-user, it seems to me that the effect of the Gamma control in ProI-mage, ChangeFSI and many other image-processing applications has a somewhat similar effect to the *contrast* control on a monitor or TV. Indeed, the control which seems to have an identical effect in ImageMaster is called Contrast, so I feel we are on the right track. However, a monitor/TV contrast control seems to affect *both* ends of the spectrum, i.e. a low contrast setting will turn black into dark grey and white into light grey, to produce a rather 'flat' picture. It seems that Gamma correction leaves the white end alone and affects only the black end.

So why should we wish to apply Gamma correction? Probably the major reason is to improve printed images. We can be reasonably sure that what appears white on the monitor will be white on paper. However, darker shades on a 'back-lit' monitor will invariably come out far too dark on paper. Dark greys, for example, can turn almost black. Hence the need for a process that will leave whites alone, but lighten the darker shades; Gamma correction seems to do exactly that.

Note that the *numerical* value for Gamma for no correction at all is unity (1.0). The correction to lighten the dark end will be *greater* than 1.0. (Conversely, to increase the contrast by moving dark greys towards black, values less than 1.0 should be used.)




So what value should we set? Unfortunately, there is no one answer I can give apart from "suck it and see". This is because there are so many variables; the image quality, monitor brightness/contrast settings, the printer and its resolution, material (paper type/transparencies), personal preference, and so on. Even changing printer resolution – from 300 to pseudo-600dpi on Laser Direct for example – can have a marked effect on perceived image contrast when printed. However, a numerical Gamma value of 2.2 appears in various publications and, for me, has always been a good starting point. With a modicum of trial and error, you will soon get a feel for what Gamma to set routinely, for the particular image and your own set-up, to achieve the desired results. Does anyone have further advice on this one please?

### Comments, please

Finally, can I invite comments and ideas from anyone who has tried out the scanning process recommended by Irlam as described in the original article (scanning at low-resolution and processing in ChangeFSI prior to printing). I've made a few admittedly half-hearted attempts at getting to grips with this but with only limited success. The main problem has been that my printed results have been somewhat unpredictable, not helped by the fact that, as Irlam have said, the screen image after processing will look pretty awful.

As before, I would welcome inputs to me at 16 Westfield Close, Pocklington, York, YO4 2EY. **A**

# Small Steps

## Richard Rymarz

Small Steps is a dedicated database-style program that attempts to simplify the planning and recording of Key Stage 1 of the National Curriculum. It has been written by Derek Allen and is published by Resource, an educational software house based in Doncaster. *(Now moved to Kegworth, Derbyshire! Ed.)*

The package includes two discs, the first of which contains the program and field data. This can be installed onto hard disc without any problems. The second disc includes the curriculum data for English, Mathematics and Science and a full guide. These are supplied as Easiwriter, Pendown or !Edit files and can be printed at leisure. There is an A4 written guide which takes the user through the installation, 'getting started' and overview stages.

### Aims

Small Steps is designed to break down the very broad statements within the Attainment Targets of the core subjects of English, Mathematics and Science of the National Curriculum. It also contains a user definable option to allow one chosen curriculum area to be included. It is one of the great criticisms of the N/C that the sub-divisions are too broad and that the difference between the levels is too great – Small Steps is an attempt to remedy this situation.

The full guide notes proclaim very distinct aims and I quote:

*"The Small Steps program records will serve a variety of purposes:*

*They will identify which Attainment Targets (and Programmes of Study) a pupil has studied;*

*They will record a pupil's level of attainment and speed of progress as measured against nationally prescribed statements of attainment;*

*They will provide a teacher with information which will enable schemes of work, allocation of resources, teaching methods, staff deployment and classroom organisation to be evaluated and modified where appropriate;*

*They will provide important information when pupils change schools;*

*They will provide feedback to pupils and a basis for discussion about their achievements and areas for future effort;*

*They will provide the evidence which will be used as a basis for negotiation and discussion with parents about the achievements of their pupils; (Curriculum Guidance 1. Framework for the Primary Curriculum p15).*

*In addition, the school management disc will manipulate and print personal information on pupils. e.g. Form 7 information, class lists, etc."*

These are extremely ambitious aims. Teachers know only too well the complexity of recording the N/C and any aid should be applauded, however...

### The program – criticisms

Maybe I am fussy but it seems to me that most programs written for the Acorn range should be multitasking. There are exceptions which break this convention, especially in education where art, adventure and simulation programs do not need a multitasking environment. However, a management package must multitask since information needs to be transferred from application to application. As a Headteacher, I need to be able to move data in and out of Ovation, Style, PipeDream, or whatever, and I need to be able to do it easily. Small Steps is NOT multitasking and takes over the whole screen in mode 12. It allows the export of information as Edit files but in a rather convoluted way since the program has to be exited. Furthermore, there is no provision to export as CSV files for instance, so I cannot transfer information into another database package for further manipulation. Another criticism is that I had problems using my Laser Direct printer and could not get it to print properly. On top of that, outline fonts cannot be used although this is a very minor quibble.

### The program – in use

Clicking on !Steps results in a date check and then a fairly attractive main screen that offers four options: curriculum, analysis, toolkit and closedown. Clicking one of the first three results in a variety of pages which can be followed quite easily. For instance, following the curriculum window leads the user through the subject area, the Attainment Target, the level of attainment and the editor which then lists the statements and the small steps defined from it. These can be changed, deleted or added to. Exiting the editor results in the changes being saved.

The Toolkit option allows the user to enter class lists, design a chosen subject, edit the pupil names, draft a review of progress and print selected information.

The analysis option allows the teacher to review progress made by the pupil and prepare a plan for either an individual or a group.

Many of the pages have a help option which is quite useful if the user gets lost among the range of pages.

### Conclusion

I have been quite critical of the program design. However, everything moves very quickly, especially on my A5000 and, as familiarity grows, the possible seeds of using the program do germinate. It is daunting at first and I feel that only experienced or very brave users would attempt to use it to accomplish the stated aims. Curriculum management packages do not seem to make much impact (what happened to P.I.P.P.?) and there are possible changes just round the corner with the Dearing Report. There may be a niche for a program like Small Steps but future developments in the N/C, teacher resistance to complicated programs, the scepticism of computer-based methods as distinct from tried and tested paper-based methods and the sheer effort of entering the appropriate data, make me doubtful. I have attempted to give a flavour of what Small Steps attempts to do but if you find your curriculum planning, record-keeping and analysis of pupil attainment lacking, you may find a use for this program.

*Small Steps costs £99 +VAT from Resource for a single user version and £199 +VAT for a site licence. A second pack covering History, Geography, Technology, Music and Art at the same levels is in preparation. It will cost £49 +VAT for a single user or £99 +VAT for a site licence.* A

# First Impressions of Risc PC – 1

**Paul Hooper**

A Risc PC for a whole week? When Paul mentioned it to me, I jumped at the offer. All I had to do was write a piece about my first impressions – a fair exchange. When I got home with the machine, there, waiting on my doorstep, was Impression Publisher. So this is the result – an article written on the Risc PC using Impression Publisher. *(...but converted back to Impression II on my A540 to produce the magazine – I can't afford a Risc PC just yet! Ed.)*

The technical details have been covered in great detail in all the other publications, so what I would like to look at is the feel and style of Risc PC and what it is like to use.

### Set up

The machine I used was a Risc PC ACB25 with 200 Mb hard drive and 1Mb VRAM but it had been upgraded from 4 to 8Mb of DRAM connected to the AKF60 monitor. The hard disc was packed with programs, most of which I had little time to use, but there is a table of what software works with the machine set out below.

Setting up the Risc PC was easy, despite the fact that I had no manuals. The connections at the rear of the main slice had little icons which showed you which lead to connect to it. I first decided to mount the main slice in 'bookcase' style, but I found the insertion of floppy discs was very awkward, and my young daughter kept trying to insert the floppy upside down. So, the little plastic feet came off and the main slice went under the monitor. This seemed fine but, as I began to type, my heavy-handed use of the keyboard tended to make the monitor wobble slightly. The problem was soon solved and the slice went under the printer next to the monitor.

### Up and running

Powering up produced very little difference to my A5000 as I use the NewLook icons as a default on that machine. The palette icon has gone, and in its place was a little TV icon called the display manager. A click with <select> brought up a menu showing the number of colours and the screen resolution, with a couple of submenus which allowed you to change them. Working through the resolutions, I found 800×600 was fine, the 1024×768 and 1280×450 were usable for typing but the largest mode of 1600×600 made 12 point text almost unreadable. Thinking about this soon produced the answer – I stayed in the higher resolution mode but magnified the Impression document to 200%.

I found it easier to work in terms of screen resolution measured in pixels rather than the more difficult mode numbers. However, a click with <menu> over the display manager icon brings up a writable icon in which you can enter the old mode numbers.

### The keyboard

You may have read that Acorn has gone for a 'standard' PC type keyboard. What this means in practical terms is that Control and Caps lock on the left hand side of the keyboard have swapped places, the £ sign has shifted to the '3' key and hash has moved next to the return key. One or two of the other keys have moved but more annoying is that the words 'Shift' 'Tab' and 'Return' are now missing from the keys. For regular computer users, this will be no problem, but in the primary classroom the missing words may make it more difficult for the pupils. The keys themselves are slightly deeper but the same width as those on an A5000. The feel of the keyboard is very much a matter of personal preference. Initially, I preferred the A5000 keyboard but, after sustained use, the Risc PC keyboard became second nature.

### The slice

The main box has had much praise showered on it for its radical design, materials, etc. Certainly, inserting an expansion board or second processor is very easy and very fast. The modular design will make expansion simple with one slice mounted on top of another. A lot of thought has gone into the design of the slice from a technical point of view but I am not convinced that the same amount of thought has gone into how the slice is going to be used. The cover on the front of the machine may have seemed like a good idea, and certainly if you have a number of slices, covering up the empty bays makes good sense. The cover itself is easy to open but I found

difficult to close, as there is little of the plastic to get hold of. *(You certainly need good fingernails. Ed.)*

All this reminds me of those plastic screens that used to protect cash machines at banks. Initially, all the machines had a screen which came down when you had completed your transaction, but a few years ago a couple of yobs armed with a tube of super glue managed to put over 300 cash machines out of order in one weekend by running a line of super glue along the join. If the Risc PC is going to be used in education then, sad as it is, Acorn does need to make them vandal proof.

### Boot, fonts, system and scrap

The first thing you notice on opening the hard disc directory is the absence of Fonts, System and Scrap directories. Instead, you have a !Boot directory that uses the old System icon and which contains the other three directories along with a boot file which you can customise to your own requirements. Clicking on the !Boot icon brings up the configure application which has moved here from Apps. Once you have configured the machine, you can remove the configure program to floppy disc and prevent any reconfiguration of your machine. You can also lock the system up by using a password system. The trouble with this is that a delete-power-up can undo all of this, so a link inside the computer can be set to protect your machine It will then only reboot until the link is changed again. The various techniques that are available to protect your data will be welcome within education.

### Your own apps

Apps has also moved and is no longer contained within the ROMs but is on the hard disc. The icon still appears on the iconbar and a click will bring up its contents. This means that you can customise your own version of Apps. So if, like me, you use about three or four programs most of the time, these can reside in Apps and be available at a single click.

The hard disc also contains a number of Replay files and JPEG images along with various games which used to come on the Apps disc. There is also the ArtWorks viewer and ChangeFSI. The hard disc contains a database of products which lists any known problems with software. To check if an application runs with the Risc PC just drag the application's icon onto the database and up pops the relevant page with all the details. The database will even generate a letter to the supplier for an upgrade.

### Draw, Paint and the rest

Draw has not only been given a revamp with the 'NewLook' icons, but also benefits from the improved graphics display. The Style submenu now has the colour picker as standard so that you can choose just about any colour you want. This uses the three industry standards of RGB, CMYK or HSV. Although there are few new features in Draw, the manual has a much more detailed guide to Draw and a first-class tutorial.

Paint has the 'NewLook' but appears unchanged apart from the graphic improvements. Calc has been replaced by SciCalc but Alarm remains unchanged as far as I can see.

### Other changes

There are numerous other changes from the Archimedes range and I will detail a few of them here. You can use any outline font as the desktop font, making the display much clearer. The Task Manager is almost identical to the old manager but has an extra line detailing how much space is taken by the Wimp sprite pool. The screen-saver actually switches off the monitor rather than just blanking it, so if the monitor has been off for a while, then after a very audible click, the screen may take a few seconds to warm up.

The dramatic increase in the graphics display provided means that not only do graphics come in many more colours but are also redrawn at about twice the speed than on the A5000. The hard disc seems marginally faster than that in the A5000 but the floppy is the same speed and is capable of reading 1.6Mb discs.

### Conclusions

Risc PC is certainly the machine of the future, although it is not radically better than the A5000 in performance terms at the moment. If you are thinking of upgrading from a pre-A5000 machine, then the speed and the graphics capability will certainly come as a revelation to you. Also, the upgrade path will ensure that you don't have an obsolete machine in two years time. For anyone with an older machine, I should get your order in now.

What about me, with my heavily modified A5000? Well, I shall be saving my money, at the moment. Risc PC does not offer me any significant advantages over the A5000 as I do very little graphics. Yet all this will change when the PC processor becomes available in September and the ARM700 later in the year, then I shall take the plunge.

Mind you, having just copied this article over from the Risc PC to the A5000, I am realising that the speed of the hard disc inside the Risc PC is actually rather faster than I first thought and the graphics on the A5000 certainly look pretty tired – now where did I put my cheque book... ?

On a final note, I was talking to a teacher the other day who was delighted with the launch of Risc PC. As he put it, "At long last, Acorn has come up with the *real* successor to the good old BBC 'B' – a machine that can be used not only by the reception class but also by a University Professor." Now that's what I call praise!

**Thanks to...**

Much has been said in Archive about the 'Acorn Spirit' and certainly, during the past week, I have experienced it. I had to ring a number of software houses about getting versions of their software that would run on the Risc PC. Because the time scale was so short, I didn't have time to send back my master discs and wait for the upgrades, so I rang them and explained the situation and almost without exception, the upgrades arrived on my door step the following day. My thanks must go to Brian Kerslake at Topologika, Nick Wright at 3T Productions (Key Series), and Sharon Fellows at Solent Computers (Oak Recorder) who all answered my queries and problems. Certainly, these firms displayed the Acorn Spirit to the full. Thanks again! A

# First Impressions of the Risc PC – 2

## Gabriel Swords

You know how the excitement mounts when you get hold of the latest piece of software or hardware – you quickly open the packaging so that you can get the thing out and running. Well, when it comes to the Risc PC, you can forget it. There is just *no way* you will ever get the packing open quickly enough. My advice is to calmly put the kettle on, make yourself a drink and study the box carefully! The packaging is so complicated that Acorn have put three photographs (on the bottom of the box!) to show you how to get into it. It's probably some kind of initiation test to make sure you're worthy of owning the new machine. Fortunately, opening the box is the most complicated thing you will have to do with the Risc PC.

**Once inside**

Once inside the box, the first thing you notice about the Risc PC is how light it is. Out has gone the utilitarian metal box which tries to cut your fingers off when you attempt to open it *(spot the A5000 owner! Ed.)* and in has come a neat, plastic 'this-looks-like-a-real-computer' casing. It's curved at the front and has a pull down flap which hides the disc drive and the spare slot for something optional like a CD or additional hard drive.

The case itself is slightly higher and narrower than the A5000, so if, like me, your A5000 tucks snugly under a custom made shelf, you'll have to raise the shelf half an inch.

The keyboard is compact and well laid out. It's a standard PC design so some of the keys are in different positions from the standard Acorn keyboard. For example, the lefthand control key is where the caps lock is on the Acorn one. The left-hand shift key, just above control, is half the size of the Acorn key. Where the £ sign is on the Acorn keyboard you'll find a double-sized delete key. It takes a while to get used to some of these new positions but, after a couple of days, I found I was getting around quite well. In fact, I prefer the larger sized delete key because, when I'm touch typing, I no longer hit the pound sign – something I invariably do on the Acorn keyboard.

Setting up the system is simplicity itself. The Acorn screen has two wires already in place and they plug straight into the back of the computer. The keyboard and mouse also plug into the back. On the

keyboard you get a much longer wire so you can have the computer further away from your working area. You can even mount the case on its side pushing it right out of the way.

The screen (mine was an AKF60) is much better than the old Acorn 'Fisher Price' screens of yesteryear. The picture is much sharper, although it still doesn't go right to the edge. With the new screen configuration dialogue box, it's also easier to choose a screen mode and colour combination – colours go from basic black and white to 16 million colours, depending on how much VRAM you have (whatever VRAM is!). The only annoying thing is that the screen takes several seconds to come back to life once the screen blanker has been in operation.

All the plugs at the back are neatly spaced and clearly labelled. There are also two slots for additional expansion cards at the back. Getting in and out of the case is as easy as everyone says. It has a lid with two catches on top, swivel them back, lift the lid and you're in. This makes plugging in cards and chips really easy – in that sense, it is the most accessible computer I have ever used.

My only criticism of the design is to say that, in the words of my son, the on/off switch is pretty cheap looking!

### Getting going

Being the excitable type, when I got the machine for my week's evaluation, I quickly removed my A5000 and plugged the Risc PC in its place. I stupidly thought I would be able to get going straight away – which I could, sort of!

So here's my second piece of advice. After you've finished that drink I mentioned earlier, you had better start writing to all your favourite software companies because you might find your most treasured word processor is now obsolete. If you run Impression, you will need to upgrade to Style or Publisher. If you have a Laser Direct or Scanlight Professional, you'll need an upgrade to their software. The same goes for any old SCSI cards you might have tucked away in your old machine. If you want to avoid this huge disappointment, it might be worth getting hold of the upgrades *before* you actually get the machine. Alternatively, if you do get the machine first, you will at least find a helpful product directory included on the hard drive which will tell you if any of your particular bits of software need upgrading – very useful!

### Operating system

In operation, the Risc PC is very similar to existing machines... which isn't surprising because the operating system is only a slightly altered version of 3.11. This makes getting used to the machine very easy – at least there are no new procedures to learn, and hopefully no new bugs to cope with! The changes that have been made seem to be more cosmetic than anything else. For example, the pinboard now has a choice of textured backdrop, which can be chosen from the new screen configuration dialogue. Buttons and such-like are in 3D, and when you open a file, its icon opens up like an 'open file'. Selecting and moving a group of files looks a bit different too. Instead of the boring old dotted box moving across the screen, you now get a parcel wrapped up like a present – very cute!

All the system software is neatly collected together in a new-style !Boot directory. This includes Fonts, Configure, Scrap, System, Choices – including a new or old style boot-up sequence.

One major difference between the Risc PC and the older style machines is that Paint, Draw and Edit are no longer in ROM but are included as disc-based programs. They still open extremely quickly and work much the same as before but if you run them all together, even without anything drawn, painted or typed, they use up about 850Kb compared with 224Kb on RISC OS 3.1. In the past, one of the selling points of Acorn machines was that you got a reasonable painting package, WP and drawing program included in ROM – this made them fast and always accessible because they were not so reliant on the RAM. That is no longer the case. Mind you, with the Risc PC it's easier and cheaper to upgrade the RAM and there are no floppy-disc-only versions for the computer, so it's not so much of a problem.

### Speed

The Risc PC only runs at twice the speed of an A5000! At first I didn't think that was going to be very impressive. Having used it for a week, I have now changed my mind. Take a simple operation like

manipulating a scanned image. I set the machine two simple tasks. Having scanned a fairly complex image, I dropped the sprite into !Paint and filled it with a mask – a very time-consuming task at the best of times! From there it had to trace the sprite and turn it into a drawfile. The job took about 20 minutes on my A5000 and, as you would expect, less than 10 minutes on the Risc PC.

Although 'speed isn't everything', in practice, being able to accomplish a simple but time-consuming task in half the time actually makes me more productive. It means that I can get on with my work and not have to wait for the machine to finish. And when you realise that in a matter of months, we shall have the ARM 700, and later the 800, it makes the future look very fast... before you know it, you'll be able to finish for the day even before you've begun.

### Conclusions

The two words that sum up this machine are 'easy' and 'neat'. For once, Acorn seem to have really thought about the design, layout and ease-of-use of their computer. This is a computer I could do business with. It's also a computer that looks like a business computer – one that would proudly sit in any office or design studio. All that's needed now is the right kind of software and a decent marketing strategy and this machine could do wonders for Acorn's share of the market. On the software front, things are beginning to look a little more promising; on the marketing side, just using the term PC is a major change in people's attitudes – though I bet it has given some of the diehard Archimedes users apoplexy! A

# Pendown Etoiles

## Phyllis Brighouse

Some time this year, the RSA plans to run a CLAIT examination in French and I have been looking for a suitable wordprocessor to use. I think this may be it. PenDown Etoiles is a French conversion of Longman Logotron's PenDown Plus program with some added features and changes. All program instructions, menus, dialogue boxes, etc are in French.

The package comes with two manuals: a tutor's manual in English and a pupil's manual in French, and the computer disc. A sheet of Teachers' Notes gives some initial guidance to the teacher.

### Installation

The program installed to hard disc perfectly. To me, this is important because, although I understand the need to protect software, that does not stop me from loathing programs that compel me to run them from floppy disc when I have paid for a hard disc.

There is provision for both RISC OS 2 and RISC OS 3 fonts, and a clear Help file, with step by step instructions for network users.

### Running the program

Double-clicking on the !Etoiles icon brings up a copyright message, in French, and the Etoiles icon installs on the iconbar. Clicking <menu> over this icon gives four options: Info, Recommencer, Configuer and Terminer.

Clicking on Configuer brings up the PenDown Plus dialogue box, in French, to allow the user to tailor the program's main menu, and the program's save, autosave, print, screen and ruler.

Clicking on Recommencer brings up the editing window, with a ruler and a strip of icon buttons for a new ruler, graphics, the insert/overwrite mode, font selector and change font icons, text colour, underscore, superscript and subscript, justification, line spacing (in desktop publishing "points" rather than the typewriter's "single/double spacing" options), and a case change button (an option I always miss in a wordprocessor when it is omitted).

Pointing and clicking at these buttons brings up French language dialogue boxes. Point and click at what you want and make the change. Pupils will find the meaning of the icons clear and easy to learn. The system follows PenDown Plus and should be easily followed by PenDown Plus users but, of course, there are changes.

Apart from the obvious change, that everything is in French, the other main differences are the function

keys. All eleven have been totally reprogrammed as accent keys (F12 still brings up the star command line) and a tear-off function key strip is provided on the Registration card. Shift and function gives capital accented letters for those people who still wish to use accents on capital letters. Control or Shift/Control and the function keys do nothing at all.

This contrasts with PenDown Plus which provides a wide range of options on the function keys. I have to admit to a prejudice here. I like my function keys simple, with easy-to-read instructions. Inexperienced pupils find mouse menus, and now point and click icon buttons, easier and faster than trying to read function key strips printed about 3 points high. Dedicated PenDown Plus users may feel otherwise and may wish to reprogram the function keys for Control/function and Shift/Control/function using the Key Scripts directory located in the PenDown Etoiles directory.

### In the classroom

The pupil's book provides a set of activities and the program disc contains example files, and pupils quickly learn to use the basics of the program. Activity 1 displays pictures and short texts about William the Conqueror. Pupils overwrite the dashes with words selected from a choice beneath the text. Pupils then spellcheck their French from the French spellchecker provided. In other activities, pupils design posters, and learn how to place graphics, choose fonts, format text, save and print.

On the disc is a "Mot Juste" file which contains prepared lists of words, in French, and selecting a word from this list automatically enters it into the document. This is a French word file from the very useful PenDown Plus !WordList utility. If pupils who are given assignments are using these wordlists, and then make a mistake, it will clearly be a mistake in their French, not their keyboarding skills. Pupils are also exposed to correct French, not repeated errors.

This utility is also useful in vocabulary work. Words can be grouped together into subject areas, and the Mot Juste file supplies a list for you, providing eighteen word groups. The !WordList utility is provided with its facilities for creating word groups, anagrams and search and sort, making this a valuable classroom addition to the French word processor for teacher and pupil alike.

A Cloze utility is also provided to make Cloze files from text.

### Manuals

I tend to be obsessed with manuals. Many are not well written or clear, and clarifying points with software publishers by telephone is expensive and therefore discouraged in schools. Longman's manuals are all well written and models of clarity, and these manuals are no exception, with one reservation.

The pupil's French manual provides simple exercises, in simple French, with clear graphical signals to pupils on what they are intended to do. At the end of the manual is a complete translation of all dialogue boxes and menus, with the French and the translations side by side. Any pupils unsure what a menu or dialogue box is asking them to do, have a straightforward reference section to look up the action. This is an excellent manual.

The English language manual is the PenDown manual inside Etoiles covers. It too is excellent and covers much more ground than the French manual. Unfortunately, the changed function keys are not included, only the original PenDown Plus ones. That one discrepancy throws the rest of the manual into doubt.

The Contents page includes details about Chapters and Master Pages, Mail Merging, and The Bin, which are not covered in the French manual. If you are not a regular PenDown Plus user (I am not), you may become confused about what is included from PenDown Plus to Etoiles, and what is not. In the references at the back of the pupil's book, some lines are greyed out.

Longman informs me that everything in the English language manual works for PenDown Etoiles with the exception of the Suggest option in the spellchecker. PenDown Etoiles is a fully functioning desktop publisher, but because English word patterns are so different to French ones, the Suggest function does not work. Longman are reprinting the English manual and have promised to look at the function keys when they do so.

### Etoiles for CLAIT?

There is no doubt that when the French language CLAIT begins, this word processor will allow pupils to complete the two hour assignment. The program's editing functions are more than adequate, with centre and bold, search and replace, and cut and paste functions; its formatting is particularly easy to use, so that pupils will have no difficulty editing the ruler, or changing the justification and line spacing. With the function keys providing accent keys, text entry is quick and easy, and the spell-checker efficient.

PenDown Etoiles, Version 1.17 is available from Archive, price £58. A

# Wimp Programmer's Toolkit

## Hutch Curry

The Wimp Programmer's Toolkit from Risc Developments contains sixteen utility programs to assist anyone programming the RISC OS Wimp. Most of the programs have general utility to any programmer, although a number have particular relevance to Basic. Each of these programs can be run as a stand-alone application by double-clicking the filer icon or, alternatively, there is a front-end menu program called !!WimpKit from which any of the other applications can be run. The programs included in the toolkit are listed below with a brief description of the purpose of each.

**!WimpLib** by Mark Moxon. This provides a useful library of Basic functions and procedures for use when writing Wimp applications. It has routines to perform many of the usual operations that Wimp programs have to perform (like placing icons on the iconbar), so that a Wimp application can be written more quickly. The library should enable the aspiring Basic programmer to develop Wimp applications more easily.

**!WimpAid** (Version 1.1) by Graham Crow. WimpAid displays a variety of information related to the position of the pointer on the desktop. As you move the pointer, you can obtain continuously updated and detailed information about pointer coordinates, the window the pointer is over and the icon within that window.

**!Tempi** (Version 1.3) by Graham Crow. Tempi is a program to read window template files and display their complete contents in a digestible format.

**!Spyglass** (Version 1.01) by David Spencer. Spyglass is a very useful and powerful application which allows you to 'spy' on the memory locations used by another application whilst that application is running.

**!PollMask** (Version 1.37) by Mike Whiteman. This is a small application to generate the poll mask number required in R0 of the Wimp_Poll routine. It is also an excellent example of the type of application which can be developed with the Wimp Library.

**!Pointer** (Version 1.1) by Graham Crow. Pointer is an invaluable utility for debugging template files. It allows you to locate missing icons, either by giving Pointer the missing icon's number, or by cycling through all the icons in any window. It also continuously monitors the mouse pointer and reports useful information about the windows and icons beneath it, in a similar fashion to WimpAid.

**!Messages** (Version 2.0) by A Phillipson. This is a useful utility which enables you to gain an insight into the Wimp messaging system. Installing the program opens the Messages window, which displays the reason codes returned to the program by Wimp_Poll, together with a description of each. These may be messages directed specifically to the task itself; e.g. a request to open a window; or messages broadcast to all tasks; for example, notification that a task has been started up or closed down.

**!MenuEd** (Version 1.8) by Keith Moulding. MenuEd is designed to simplify the process of creating menu structures for Wimp programs. The application generates a data file containing the menu structures required, which is given a filetype of &7FD or Menus. This file is then loaded into your own application when it is run, and the menus are accessed by using library routines which must be appended to your program.

**!LoadFile** (Version 1.05) by Lee Calcraft. The LoadFile application is designed to assist the debugging of Basic Wimp programs within the desktop environment by allowing you to load a program directly from the desktop by double-clicking on the file with <ctrl> pressed. This action enters the Basic environment with the program already loaded.

**!IBarShell** (Version 1.3) by Ben Avison and Lee Calcraft. IBarShell is a skeleton application which is designed to enable you to write simple tasks that can operate with just an iconbar icon.

**!FormEd** (Version 1.26) Copyright Acorn Computers Ltd. Risc Developments have apparently licensed the Acorn window template editor, FormEd, as part of the toolkit. This venerable application allows you to define windows on the screen and save the definitions in a file ready for loading by your own application.

**!Flags** (Version 1.0) by Graham Crow. Writing Wimp applications, no matter what language you use, invariably involves calculating the bits for various flag settings. Amongst the more difficult to calculate are the 32-bit flags used by RISC OS for icons, windows, menus and the Wimp poll. The Flags application will dynamically calculate and display the required flag value in either hex, decimal or binary, and this value can be incorporated directly into your program code. Any display may also be saved as a text file for printing or future reference.

**!EasyWimp** (Version 1.0) by Mike Ironmonger. EasyWimp is a very useful shell program, written in Basic, which provides a ready-made Wimp structure for applications which require just a single window containing any number of icons. EasyWimp sets up the application on the iconbar and handles opening and closing of the window. It also monitors user input for keypresses and clicks over the window and its associated icons. All that the user needs to add is the code to perform the necessary actions when button clicks and keypresses are made.

**!Debug** (Version 0.5) by Lee Calcraft. When developing Wimp-based multi-tasking applications for RISC OS, debugging can present quite a problem. The Debug application provides one solution to this problem. It runs from the iconbar and has a single window which displays ten numbered lines of text about the program being tested. One or more short procedures can be included in the task to allow it to send messages to Debug. These can be called at any time within the task to display the value of any variable, or any other program information, such as a message that a particular procedure has been called. Procedures and functions to communicate with Debug are provided for both Basic and C programmers.

**!BVar** (Version 1.0) by Graham Crow. BVar is one of two applications included in the Wimp Programmer's Toolkit for analysing and debugging Basic programs. It performs a similar function to the Basic command LVAR, which lists the variables defined in a Basic program. BVAR also identifies all the procedures and functions in the Basic program.

**!BPF** (Version 1.2) by Graham Crow. BPF is another application for analysing and debugging Basic programs. It identifies all the procedures and functions in a Basic program and lists them by name, together with the line at which they are defined, their length, and the percentage they represent of the total program. It also lists any procedures and functions called but not defined, defined but not called, and most importantly, defined more than once.

The programs are supplied on one disc and are accompanied with a well-written and well-illustrated A5 manual of 54 pages.

### Conclusions

In total, the Wimp Programmer's Toolkit is good value for money for anyone programming the Wimp on the Archimedes as some of the programs, such as **!Pointer** and **!Tempi**, will be useful to even the most experienced programmers. If you are a novice programmer, I think you will find the majority of the applications extremely useful. My only real complaint is with the supply of the Acorn template editor, **!FormEd**, instead of one of the others now available such as !TemplEd or !Glazier. I personally dislike **!FormEd** and think it makes Window creation much more onerous than it should be.

Wimp Programmer's Toolkit costs £21.95 inc VAT through Beebug (£17.95 for Risc User subscribers). A

# Assembly Language Programming – 2

James Riden

### Custom sprite plot

The screen display you see on your computer is simply an area of memory. The screen base address (the lowest memory location) is the top left corner. The memory location increases as you move right. When the end of the row is reached, the next highest location is on the next row down on the left again. In 256 colour modes, each colour corresponds to one byte. What follows is a simple sprite plot – for more complex routines see some of Bjørn Fløtten's articles (Archive 2.10 p23 and 3.1 p40). It replaces the previous .plotsprite routine in the DirectAnim program from last month. Remember that R12 holds the screen base address.

```
   10 REM >Custom
 1000.plotsprite
 1010 ADD R0,R12,R3
 1020 ADD R0,R0,R4,ASL#6
 1030 ADD R0,R0,R4,ASL#8
 1035 ADR R6,spriteaddr+56
 1040 MOV R1,#16
 1050 .yloop
 1060 MOV R2,#16
 1070 .xloop
 1080 LDRB R5,[R6],#1
 1090 STRB R5,[R0],#1
 1100 SUBS R2,R2,#1
 1110 BNE xloop
 1120 ADD R0,R0,#(320-16)
 1130 SUBS R1,R1,#1
 1140 BNE yloop
 1150 MOV PC,R14
 1160.spriteaddr
 1170 ]P%+=512
 1180 [OPT pass
 5005 SYS "OS_CLI","Load mysprite "+STR$~
                                  spriteaddr
 8030 EQUD 160+100*SIN(RAD(I%))
 8040 EQUD 128+100*COS(RAD(I%))
```

As before, the file *mysprite* should contain a 16*16 pixel sprite with no palette or mask. Check this with !Paint and then save first before running the program. If any errors occur, check you've typed everything correctly.

A lot of changes have been made for this routine to work. Firstly, the sprite is no longer referred to by name but instead is loaded into memory at the address .spriteaddr. Sprites with no palette have a header block and the routine compensates for this.

Also the lookup table is altered from the number of OS coordinates to the number of pixels (in mode 13 one pixel is four OS units).

The routine is called with R12 equal to the screen base address and R3 and R4 the pixel offsets from the bottom right hand corner of the screen. The x position is added to the screenbase and the result is put into R0. Then R4*320 is added to R0 to give the absolute address to start plotting. The ASL# statements can be simplified as follows:

```
R4 ASL#8 + R4 ASL#6 = R4<<8 + R4<<6 =
     R4*(2^8+2^6) = R4*(256+64) = R4*320
```

We now know where to plot the sprite. Two registers are set up to be used in the assembly version of a FOR NEXT loop. Most loops like this count downwards because it's one instruction shorter. Simply, a byte or one pixel is loaded from the sprite and stored on the screen. The ,#1 after each statement means increment the pointer (the register in the square brackets) after the operation. The screen pointer is incremented by 320-16 to bring it along one whole row minus the 16 pixels of the sprite which have been plotted. It should then be immediately below.

The SUBS instruction does the equivalent of a SUB and CMP. One register is subtracted from the other as normal but when the S suffix is present, the flags are set as if a CMP result,#0 has been performed immediately afterwards. A lot of ARM programmers, having learned on small machines such as the BBC, are incredibly careful to squeeze every last bit out of the computer so they do it this way and save one instruction per loop. You'll know why when you try writing your own demos.

There is a faster way to plot sprites providing they are on word (four byte) boundaries.

```
  10 REM >WordPlot
1060 LDMIA R6!,{r7-r10 }
1070 STMIA R0,{r7-r10 }
1080 ADD R0,R0,#320
```

then type:

```
DELETE 1090,1120
```

to get rid of lines 1090 to 1120 inclusive.

Save and run this program. Can you see how jerky the movement is? This type of plot is only useful for a few situations.

These lines alter the routine to use the much faster multiple load/store instruction. The format is slightly different, with the pointer being the first register and the list of registers being inside the curly brackets. The exclamation mark after R6 means that it advances R6 by the same number of words as there are registers. The `IA` stands for Increment After, while `I` means store the registers going upwards in memory and A means first store a register and then increment the pointer. The opposites are D which means the pointer goes downwards in memory and B which means move the pointer before storing a register.

Next month, I'll start on scrolltexts. Keep experimenting and enjoy yourselves! A

# CardShop

## Richard Rymarz

Children love making cards. Not only does it save them money, but they gain a great deal of satisfaction from creating their own design, colouring it in, making an envelope and even drawing a stamp. Then there is the pleasure of handing over their finished cards. Parents, grannies, brothers and sisters also appreciate the effort that a child has put into something they have created themselves. In school and at home, there are endless opportunities for children of all ages to make their own cards.

With this in mind, Clares have produced a neat program that allows children to do all those things. It is written by Mark Smith and cost £24.95 or £23 through Archive.

### The package

Cardshop comes on two discs – one contains the main program, a fonts folder, some borders and some pictures. The second is a resource disc containing lots more pictures. There is a well-written, 36-page, ring-bound manual which explains how to initialise the discs, install the program on hard disc (no problems), how to get started and so on. It is clearly written with loads of illustrations. The program is fully RISC OS compliant.

### The program

Clicking <select> on the Cardshop icon brings up the main window. There is a work area which, by default, shows the front of a card. Two banks of large icons adorn the left side of the window and, at the top, is a toolbox with five icons. The top four icons on the left correspond to the four 'modes': card mode used to design the front of the card; message mode used to write messages inside the card; envelope mode which creates the envelope and an address; and finally stamp mode which can be used to design a row of stamps which can then be cut out and stuck on the envelope.

The lower four icons concern housekeeping allowing the user to: save a card; reset boarder and picture lists; set directory paths for boarders and pictures; and there is a dustbin to quit work in a particular mode ready for a fresh start. User-defined directories of pictures can be created and selected.

The tool box allows the user to select a font, write messages (up to 6 rows, each 35 characters long – easily sufficient), print a card, select a border and select a picture. The tool box changes according to the mode selected. All this is fairly intuitive and even quite young children are soon be able to create a complete card.

### Conclusions

This is not the place to discuss whether the computer should or should not be used for a task that, traditionally, children have done with paper and ink. Children should continue to be encouraged to draw freehand. I will simply state that this is another way

of producing an effective result which, for some children, might be the only way they achieve a neat and tidy piece of work. A word processor does the same for those with poor handwriting. One very useful addition, partly implemented, is a larger selection of monochrome drawings and some fonts in outline so that the children could colour in their selections – not too many of us have access to colour printers.

I could give a long wish list for improvements such as resizing of text and pictures, overlapping of text, picture movement, etc but, to be fair, such features belong to a DTP program. Maybe some will be incorporated in future versions which would then broaden its appeal to older children. However, for the asking price (the price of a standard game) there is a lot of pleasure to be gained by children at home and at school. Card Shop does what it sets out to do quite effectively and simply. A

# 10 out of 10 Maths – Statistics

## Richard Rymarz

Looking through the computer press, it is noticeable that 10 out of 10 Educational Systems – a subsidiary of game producers 4th Dimension – are producing a whole variety of programs under the 10/10 banner. Not only are their programs produced for all computer formats, they now include areas such as dinosaurs, foreign languages and even passing the driving test.

10/10 Maths Statistics is an extension of their series of games for primary and secondary school children with the emphasis on fun and arcade style presentation to aid learning. I have used 10/10 Maths and English for some time with my group of ten and eleven year olds. The programs have been quite successful offering one way of checking the children's progress through some of the National Curriculum Attainment Targets.

### The package

The program comes on two discs and can be installed onto hard disc – no protection is used. An easy-to-use install program makes the whole thing painless. There are two booklets: the Parent/Teacher guide which introduces the program, relates it to the National Curriculum, explains the grading and scoring system and unravels how to customise the games; and the Player's guide which makes clear how to play the games and how the Record of Achievement works. Everything is quite comprehensive but requires a little effort to fully understand.

### The games

Statistics has been produced two years later than the two other programs that I use and I was interested to see how much further the design element had progressed.

There are six games relating to 36 areas of Attainment Target 5 of the National Curriculum – Data Handling. Each game has six grades which relate to the ten levels of the N/C – so it is claimed that it can be used from early primary school to secondary schools up to Year 10 (14 year olds). This is very ambitious and I have no way of knowing how effective they are beyond primary school age.

I will give you a brief description of the aims of each game and the gameplay involved:

**Bomber** – simple construction of block graphs, pictograms, bar line graphs, frequency curves and histograms.

The game involves bombing and building block graphs. A helicopter or plane flies across the screen getting lower and lower as the blocks are altered. This I thought was quite difficult even at the simplest grade and it took my children some time to master the skill – the fun slightly tarnished by the amount of information needed to be held in the children's heads.

**Survey** – recording observations, grouping and ordering, tallying, using relative frequency and estimating probability.

Grade 1 offers young children the chance to record the number of creatures around a pond. There are then some simple questions to answer. This was good, the children coping very well. The last grade involves tallying dice throws and answering questions on frequency.

**Cheers** – recognising outcomes from random events, placing events in likely order, understanding mean and mode, distinguishing between estimates and probabilities and the addition of probabilities for mutually exclusive events.

At Grade 1, Cheers is a simple 'snakes and ladders' game. A dice is thrown and the children have to read a statement and then choose the correct one from a list of possible answers. Once again this was quite difficult and a great deal of thought was needed by the children.

The highest grade involves working out the probability of a combination of chances.

**Archer** – sorting a set of objects, using words to identify chance, calculation of the mean and range of data, calculation of probability of a combined event and calculation of the probability of two events happening.

Archer is an arcade-style game like Whack It (see below). The children have to shoot an arrow through a coloured balloon that contains a word belonging to a family. My children enjoyed this game but again some of the vocabulary was too difficult for very young children.

The hardest grade was basically the same but involved some – to my mind anyway – quite difficult calculation of probability.

**Whack It** – choosing criteria to classify objects, recognising events as certain, uncertain or impossible, distinguishing between fair and unfair, know that P(E)+P(not E) = 1 and P(not E) = 1-P(E) (whatever that might mean) and calculate the mean.

This game has been seen before in other 10/10 programs and, at its easiest level, involves the children reading groups such as 'elephant, monkey, lion, tiger', then finding the word 'animals' somewhere in the main screen and 'whacking' it with a hammer. My main concern is that some of the vocabulary is too difficult for very young children.

The highest grade involves using a calculator to discover the 'mean' from a set of frequencies.

**Sniper** – interpreting block graphs, pictograms, pie charts, network diagrams, frequency tables and histograms.

Sniper has also been seen before. Grade 1 involves simple interpretation of block graphs. A moving target containing the answer to a question has to be 'shot'. Again, some of the language is quite difficult.

Grade 6 involves careful reading of the question and interpretation of the graph before attempting an answer.

**Conclusions**

I have mixed feelings about this group of programs. The presentation is much slicker than previous offerings. It offers more than just drill and practice since some heavy thinking is required to solve some of the puzzles. The games are enjoyed by the children, particularly those styled along arcade lines. However, there are some careful considerations needed:

1. How will it be integrated in the classroom?

2. How are questions of language overcome, especially for younger children or slow learners?

3. What exactly does it do for the child and how is it related to his/her mathematical development?

Please don't be too discouraged from buying and using the program at home (especially for primary school age children – I find it hard to imagine teenagers playing it at home) or school. There does seem to be an awful lot in the program that could lead to useful work away from the computer. As usual with most 'educational' software, an imaginative teacher or parent will derive much from it.

Maths-Statistics costs £25.95 inclusive from 4th Dimension or £24 through Archive and represents good value for money.

Finally, there is a bonus. Another game called 'Word Fit' is included. What this has to do with the main suite of programs, I do not know. Perhaps it was 'superfluous' to requirements or not good enough to be included in a full suite of English programs. Anyway, it is there and is a spelling game. Unfortunately, I don't think it is particularly brilliant, the idea being to fill in a grid with words in a crossword-type pattern. The words across the grades are user-definable but playing the game is quite cumbersome. Never-the-less it is there if you can find a use for it. **A**

# Observess – An Expert System Shell

Les May

### What is an expert system?

Well, the following story will help to illustrate it for us... Some years ago a friend of mine built an audio compressor/expander unit for his home studio. So far as one could tell, it was built exactly to the design given in the audio magazine, but it refused to work. After a few hours spent in checking the circuit, he brought it to my house and asked if I would take a look at it. With my scanty knowledge of analogue electronics, I checked for dry joints, wrong component values and so on. Having found nothing wrong, out came a test meter. Starting with the +ve and –ve supply lines and the power pins of the ICs, the voltages at different points in the circuit were checked, before moving on to do the same test at the various transistors.

After about ten minutes work, it seemed that the problem probably lay with three transistors. One faulty new transistor I could understand, but not three! As I did not have replacements to hand, I decided to look in my transistor equivalents book to check on possible substitutes. It was at this point I realised what the problem was. It appeared that the transistors giving the trouble were manufactured with two different lead configurations but with the same encapsulation! After resoldering them with the leads correctly oriented, the circuit worked as described.

Diagnostic situations like this are by no means rare. The problem domain is narrowly defined, in this case, analogue electronics, and there is a clear goal – discovering the fault. Applying the tests is equivalent to asking a series of questions and the results are equivalent to 'answers'. Knowledge of which 'questions' to ask and what can be inferred from the various 'answers' is where the skill lies. If the skill is difficult to acquire because the number of possible questions is very large and interpreting the answers requires the exercise of judgement, we call the people 'experts'.

Initially, attempts to automate these procedures lead to the development of specialised computer programs in which the knowledge, the question and answer routines and the process of making inferences from the answers were intermingled. This is equivalent to writing a new wordprocessor program to operate on every new piece of text! Not surprisingly, these were superseded by programs which separate the questions and answers – the knowledge base – from the mechanism which asks the questions and processes the answers – the inference engine. This type of generic program is usually called an 'expert system' shell because the same program allows the building and using of any number of different expert systems. The inference engine must also be able to explain to the user its reasoning.

Although the term 'expert system' was the first to be coined, today, the term knowledge-based system (KBS) is often used. A KBS may be formally defined as, 'a computer-based system which supports or performs automatically, a cognitive task in a narrow problem domain which is usually only carried out by human experts'.

### Enter Observess

Observess from Rebecca Shalfield is a fully multitasking expert system shell for RISC OS computers. It allows developers to construct and test their own KBSs in a knowledge domain of their choice, and to distribute them along with a run-time edition upon which no royalties are payable. Up to a thousand rules with an IF... THEN... structure are allowed, each with up to three conditions which are ANDed together. OR is not supported but a method of avoiding this limitation is explained in the manual as is the way of dealing with more than three conditions. Rules can be Displayed, Added, Amended, Deleted, Swapped or Reset. Most of these are self-explanatory. Swap changes the order in which the rules are dealt with during a consultation session. Known conditions or conclusions are called facts and up to a hundred of these are allowed. Because both rules and facts may be indicative rather than diagnostic of a particular conclusion, both can be assigned percentage certainty factors.

Observess is a complex program designed to simplify the task of making use of some quite sophisticated ideas. It succeeds in doing this, but whether it is successful enough will depend on the motivation of the end user of the knowledge base. The explanation facility is, perhaps inevitably, rather primitive. A reasonably experienced computer user would have no difficulty but a reluctant user would probably expect to find a much more detailed and verbose explanation.

### Documentation

Initially, I found myself judging Observess by the quality of the supplied knowledge bases, which would be quite wrong. Having said that, I did find them rather poor, even pointless. Only eight lines of the twenty page manual are devoted to advice on how to construct a knowledge base. It would be a real asset to have a couple of extra pages devoted to building a knowledge base from scratch – it could use one of those supplied as an example.

The manual is a mixture of clear 'do this' instructions and occasional obscure sentences. Topics are dealt with as a series of numbered sections and the index refers to a section number rather than a page. This will make the addition of new topics a simple task. Unfortunately, even with spacing between topics there are 45 lines per page and more than a hundred characters to a line. In other words it is quite difficult to read! The manual is very honest about things that are missing from the program or might be done better. It also indicates what will be added in later versions.

### Niggles

Apart from the manual my other reservations include a number of minor niggles like the choice of colours for the windows – one is a sickly orange, and the layout of the 'Ask question' window. Changing a rule is done via the Amend window and the user has to remember to click on the OK icon to ensure that the rule is amended. It would be nice if the program detected a text change and made the rule change automatically when the rule number is incremented or decremented. When the expert system cannot provide a recommendation, the user is informed of this through an error window because the condition is treated as an error. It isn't an error. The problem arises from an attempt to simplify the procedure responsible for supplying messages.

### Feedback from the programmer

Users are encouraged to contact the author with queries, comments and recommendations. I did this and got a quick response to the points I raised. This will probably lead to a succession of minor changes in the program as the author tweaks it in the light of feedback from users. A number of changes are already being made to the next version being prepared for release, version 1.11. Perhaps the necessary feedback should have been obtained *before* it was released onto the market.

One of the points raised with the author was that one menu suggests that it is possible to launch a consultation session using a function key. Even after getting a reply to a query about this, I still could not get it to work as it should. It does work, but not consistently. I also found that when I wanted to drop the program from the iconbar, I kept being told that I had not saved the knowledge base, even though I had not modified it.

News of upgrades, answers to queries and hints on using the program are promised in The Observess Chronicle which came with update 1.09.

### Great potential

If this were a preview of an as yet unreleased program, my feelings would be entirely positive, because it has a great deal of potential. Because it's a review of a program that has already been released, I have reported the problems I encountered.

In spite of the 'rough edges' which the Observess undoubtedly has, it would be good value for money to anyone who wants to develop an expert system to sell or distribute to others. If you have a use for it, you will put up with the problems. It is not a toy, it is a real expert system shell and you can freely distribute the run time version with your knowledge base. I used it to make a simple expert system to help with the identification of common gases such as might be encountered by children in the lower secondary school. Another use which comes to mind is building an adviser about which statistical test is most appropriate.

You may have noticed that it is very unlikely that an

analogue electronics expert system would have been able to diagnose the ultimate cause of my problem with the transistors – which is good news for we humans! The program was tested on an A5000 with 4Mb of RAM and hard disc.

The developer's version of the Observess expert system shell, complete with the royalty-free run-time version, is available from Rebecca Shalfield, 51 Swallowfield Road, Charlton, London, SE7 7NT, price £20. A

# Technical Clipart Collection

## Mike Tomkinson

The problem with clipart is that you never have enough of it. Perhaps that sentence should read 'good clipart' as there is certainly enough poor quality material around. It must be said that some of the PD houses are the worst offenders. Some are guilty of supplying clipart "collections" which might charitably best be described as of variable quality. The argument that it is cheap does not excuse the fact that some of it consists of no more than poorly scanned images and even worse, conversions of PC clips.

### Good clipart

It is always good to see clipart which has a quality look to it. This certainly applies to the Technical Clipart Collection from PTW Software.

The disc contains a library of Chemistry apparatus and an electronic circuit drawing system which can be combined with a PCB symbol library to produce printed circuit diagrams which can also include ICs.

### PCB artwork

The latter feature is really only an option on drawing packages which have the ability to layer or overlay views and which have a library facility. The excellent PD DrawPlus or its most commercial and fully-featured development, Vector from 4Mation, are highly recommended. Some of the more specialised PCB drafting clipart is supplied in DrawPlus format for this reason. Draw is simply not up to this task.

Given the low cost of this clipart collection (£7.50 inclusive) it could be argued that savings are likely to be achieved when comparing it to specialised PCB drafting software. A copy of the Technical Clipart Collection plus Vector represents excellent value for money. No-one is suggesting that it replaces professional standard PCB design software but, for occasional use, it is more than adequate.

The clipart is supplied with an A5-sized 8-page manual which gives users all the help they are likely to need to produce worthwhile results. However, it does not replace the Vector manual and the person who has not got to grips with libraries and layers would need to consult the appropriate sections.

The supplied documentation does assume that the user has the ability to use Draw and DrawPlus. Perhaps a worked example using layers and libraries would be useful for those new to packages other than Draw. DrawPlus is certainly not that different from Draw but a learning curve would certainly exist for some users. However, it is good to see clipart supplied with printed manuals rather than the usual scant help file on disc (if you are lucky).

Perhaps others would argue that this clipart fills a niche in the market and it certainly has the redeeming features of being high quality and inexpensive at the ridiculously low price of £7.50 inclusive. The price represents particularly good value for schools as it also includes a site licence.

### Chemistry apparatus

The Chemistry apparatus library is certainly the most accessible part of the collection. It is very easy to produce highly acceptable worksheets and examination papers, by using it in combination with Draw and/or any DTP package. It should certainly be of use to all teachers of Chemistry and would be a worthwhile addition to the hard discs of all Science Department Archimedes and Risc PCs.

Hobbyists and schools with electronics departments and would also find the circuit and PCB collections useful but they will need DrawPlus or Vector. My only slight criticism is that the individual pieces of Chemistry apparatus and the flasks and tubes are not included as a Vector library file. A

# Phases à la Nouveau


## Phyllis Brighouse

I teach junior and senior pupils in an Independent school. We teach French starting from Year 6, and RSA CLAIT, and are looking for a French word processor to teach the new French CLAIT.


### The program

Phases à la Français, Version 1.08, is a full French language version of NW SEMERC's wordprocessor and desktop publisher Phases 3, with the wordbank facility found in the Full Phases program added. This is a second screen which can be used as a substitute for an overlay keyboard.

You can create pages of text, change the font size and font type, import graphics, and import Cloze texts created in Full Phase. The text size is especially easy to use; six size options are given, with the size of the final text displayed in the size it will appear on the screen and in print. Point and click at the size wanted. There is also a notepad. Text can be centred, or left or right justified, and rearranged into two columns, newspaper style. You can remove a graphic or add new graphics to a page as required.

With Phases à la Français, all the menus and instructions are presented in French. Save becomes Sauvegarder, for instance. It should be noted that somebody seems to have missed the screen page numbers; these are still in English as page one, page two, etc. I am sure NW SEMERC will change this in the next version.

### Documentation

This consists of the English language version of the Phases 3 manual with a French language supplement. As I think in English when working, this did not worry me. The book is small, well laid out, and ring bound, so it sits neatly beside you and does not get in the way. The supplement I saw was not as detailed as it could be in explaining how to use the wordbank, but SEMERC informs me that this will be looked at.

### Installing the program

We use A3000s with a hard disc and RISC OS 2, and a BJ200 printer. To install the program, you simply create a suitable directory on the hard disc, display the contents of the floppy disc in their window, and drag each file across.

I already use Phases 2 and run fonts from my hard disc font manager. The only font file supplied which I did not have was Cloze. I added it to my hard disc font directory and everything worked perfectly.

### Running the program

With RISC OS 2, you have to install your printer driver first, so that the program can set up correctly, or it does not run. A large clear notice inside the manual front cover instructs you to do this.

Double click on the font manager, open the Phases directory and double click on the !Phases 3 icon. It appears on the iconbar. Clicking <menu> over this icon gives you your mouse menus – all in French.

The French language supplement instructs you to open the directory called Work containing a file called banque_mot (the wordbank file) and load it to the Phase à la Français icon on the iconbar. You can either double-click on the directory icon, or else drag it to the iconbar. Two screens appear: a blue one (the wordbank) and a writing screen. Each screen is separate and you can drag them apart, enlarge or reduce them individually, push one or the other to the back, or remove one completely.

Next you are instructed to drag a text file called Accents onto the blue area. I did so, and accented French characters appeared on the blue wordbank. You are now instructed to click on the white writing area and write something in French. When you need an accented character, the instructions stated, click on the character in the wordbank and it will be entered into your writing at the caret position.

I tried to write "Bonjour Dénise" but what I got was "Bonjour Dé nise". The wordbank is literally that – a wordbank – and a space is automatically inserted after each accent clicked on. NW SEMERC informed me that a separate accent generator was being prepared, rather like !Chars, but neater.

An alternative way of entering text is to click <menu> over the iconbar and select a New Screen

– nouvel écran. You should not do this if you plan to use the wordbank; when the file is loaded to the icon on the iconbar, it deletes any new screen you have created, and the work on it.

### Creating banque mots files

Creating an Edit file with banque_mot was very simple. I dragged the banque_mots file to the icon on the iconbar so that the white writing area and the blue wordbank area appeared, and loaded the text file Accents into the wordbank. I deleted the writing window and replaced it with an Edit window instead and clicked on the accents in the wordbank to transfer them to Edit whenever I needed an accent. This was easier than using !Chars, even if I did have to keep removing the spaces. You do have to remember to end each Edit file with a return, or you will lose the last letter entered. To merge two separate files, create a new Edit file and drag the two files into it.

None of this was in either the manual or the French language supplement supplied, but the program is so intuitive to use that I had no difficulty working it out for myself, and NW SEMERC assure me they are looking at improving the supplement.

### Conclusion

As an English language word processor and desktop publisher, Phases 3 is superbly easy to use and, apart from the one slip up with the page numbering, an excellent conversion has been made to the French language.

It is not suitable for French RSA CLAIT simply because of the time constraint of 2 hours for the examination. It is, however, an excellent French language word processor for everyone else, especially people who already use Phases 3. NW SEMERC can supply a range of graphics very cheaply to load into the program, and also supplies a good database program called Optima which could be used as an electronic book, and Edit files of French text pasted into it.

Phases à la Français, Version 1.08 costs £24 (+£3 p&p) +VAT from NW SEMERC. A

# Materials, Components and Techniques

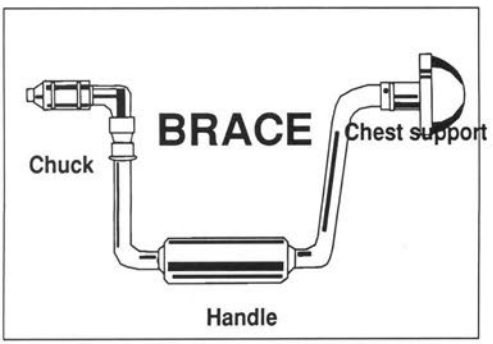
## George Barnett

Anglia Television Education's range of curriculum datafiles for its KEY data-handling system is increased by this Key Plus database package 'Materials, Components and Techniques.'

Key Plus is a powerful database program designed to meet the data-handling requirements of the National Curriculum. Key Plus Version 2.5 or above is required (Version 3 is now available). These versions would have been supplied as upgrades to any schools registering for Technical Support at a cost of £45. Otherwise an individual cost of £60 or a site licence ranging from £65 to £180 would be required.

The disc contains five datafiles designed to help students in the 11-16 year age group make choices during the 'design and make' process. Information is given on materials. The other datafiles on tools, components and joining techniques contain over 70 graphics which help students illustrate their work. These graphics can be exported using Draw. There are datafiles on 65 different types of materials, 26 components, 37 tools, 17 methods of joining and a glossary of 48 terms used in the field of plastics and polymers.

The datafile 'Material' includes a wide range of information on common materials and the names of some of the materials (particularly the plastics) include several alternatives in a single record. The datafiles 'Component', 'Tools' and 'Joining' each



have a graphic field to present pupils with a pictorial representation of the record.

A sixteen-page comprehensive booklet is provided, which is designed specifically for classroom use. This includes information which will encourage pupils to ask a variety of questions when considering the materials, components and techniques used in project work. It also includes information about the datafiles and their use. There are several study sheets including 'The right tool for the job', 'Material properties', 'Choosing metals', Choosing plastics, 'Choosing timber', and a sheet on adhesives.

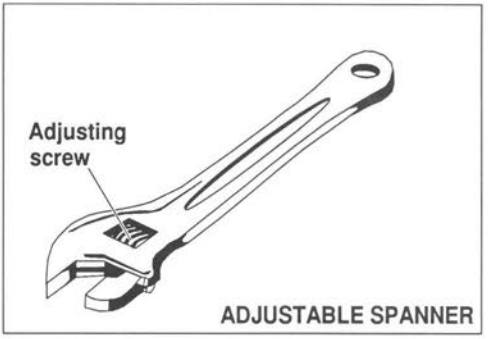
The study sheet 'Meeting the need' gives useful suggestions under the headings Design and Make, Identify an area of need, Produce a design brief, Investigate the various possibilities, Decide on the best solution, Make the product, and Test and modify it. The study sheet 'The right tool for the job' helps in picking tools – tools for holding and tools for safety.

The running of the program follows the usual Key Plus format of loading Key Plus then dragging the required datafiles onto the icon on the iconbar. The files can then be searched, sorted etc.

All sheets may be freely photocopied by the purchasing school.

This is highly recommended and would be a great help for any teacher involved in Design and Technology but remember Materials, Components and Techniques can only be used with Key Plus.

Materials, Components and Techniques is available from SCA (Anglia Television) at £22 +VAT. A




# MouseTrap

## Dave Walsh

MouseTrap is a small but useful utility, from Design Concept, to control the presses of mouse buttons. Mousetrap can make the friendly rodent even more accommodating by ignoring stray presses made by young, disabled or inexperienced users.

It is able to turn off select, menu and adjust buttons in any combination, as well as making the mouse left-handed by swopping <adjust> and <select>. It can even make all the buttons act as <select> if you fancy a one button mouse!

One of the most promising features is the ability to "latch" on with <select> rather than having to hold it down continuously. A welcome addition to the program might be an alterable timespan to achieve the latch though, as some users will find a full second static too difficult. A further helpful aid would be an audible "beep" once the mouse is in "latched" operation. The feature works within each of the paint programs that I tried allowing young users the pleasure of painting without worrying about being able to keep the button down AND move the mouse!

As the program arrived for review in a non-documented state, it was difficult to comment on the manual. Even so, it's the sort of program that should be largely intuitive and it was therefore a little surprising that I managed to lock myself out of the options on numerous occasions and had to revert to killing it through the task manager.

Mousetrap uses 128Kb as well as having a module residing in the module area. Quitting from the application on the iconbar makes the trapping function cease so you are forced into using the full memory version.

With a few minor modifications, this program could be ideal for a range of users who have specific difficulties operating the mouse. A

# Lemmings 2 – The Tribes

## Dave Floyd

Lemmings 2, not surprisingly the sequel to Lemmings, has at last made its journey from other formats to the Archimedes courtesy of Krisalis. The package comprises four discs, requires a minimum of 2Mb of memory and is available for £29.95 or £28 through Archive.

### Background

There can be few people within the computer fraternity who have not at least heard of Lemmings. In this masterpiece amongst puzzle games, the idea is to help a group of Lemmings through a plethora of screens containing puzzles which get gradually more difficult as the game progresses. For my taste, the only real drawback of the original was that some of the screens relied too much on fast reactions to complete them rather than puzzling skills. Lemmings 2 – The Tribes has no such screens to spoil the enjoyment, which will come as good news to many.

Since the original, the lemmings have settled on Lemming Island and have lived prosperous and fruitful lives as members of separate tribes, thanks to a talisman of which each of the twelve tribes holds a piece. All is not well, however and, as foretold in the prophecy, a great darkness is coming and they must escape the island. Preparations have been made in the centre of the island where an ark has been constructed to spirit the lemmings away to safety. Your objective, is to guide each tribe of lemmings from their village to the ark so that the twelve pieces of talisman may once again be joined together to give the lemmings the power to escape their fate.

Each tribe of lemmings has cultivated its own distinct culture and personality and they have learned many new skills, fifty-two in all, although only a maximum of eight are available for use at any one time. The graphics are small but detailed, as before, and a major improvement on the original is the scrolling of the screen which can now be moved in all directions, allowing larger and more devious screens. Owners of multisync and VGA monitors are also catered for with improved graphics if the game is loaded in mode 27, while those who have 4Mb machines will be rewarded with better quality sound. Finally, the function keys can now be used as an alternative to the mouse for selecting skills which comes in very useful at time critical moments.

### The game

In order to complete the game, all pieces of the talisman must reach the centre of the island. To achieve this, you must help each tribe through ten separate levels. Each tribe starts the game with sixty members and you must try to get as many of those sixty as you can through each level. If you succeed in guiding them all through, you have sixty on the next level, whereas if you only manage to save, say, ten lemmings, you have the option of trying to do better or attempting the remaining levels with your ten lemmings. The colour of your talisman piece changes to reflect how well you have done. If all lemmings are successfully saved, it is gold; a less than perfect go will be rewarded with a silver, while if most of your tribe have been left behind or died in the attempt, you will only have a bronze piece. How well you have succeeded is denoted by means of a medal awarded at the end of each level. This works well as a way of extending the life of the game, because even if you complete all the levels in a couple of weeks of playing, it will take far longer before you devise methods by which your completed talisman is solid gold.

There are no passwords in Lemmings 2. Instead, you have the facility to save your game position onto a blank disc, or your hard disc if you have installed the game. Each different tribe's trek can be attempted in any order and it is not necessary to complete all ten levels before moving to a different part of the island and another tribe. This means that if you get stuck on a particular problem, you can move on to another tribe, coming back to attempt any unsolved parts later. You can also move back through previously solved levels to attempt to improve your lemming count. The progress of each tribe is shown on the map of Lemming Island by the pieces of talisman which move inwards corresponding to the progress made in each area.

The puzzles themselves are graded well and get increasingly difficult as you progress through each of the ten levels for the twelve tribes. Experimentation and a bit of lateral thinking can be rewarded when you feel that there is no way possible to complete a screen. Like a good adventure game, a real sense of achievement is felt when a problem is solved and a level completed after hours of believing that it was impossible.

On reaching the end of a screen, each tribe has its own way of finishing. One tribe bows down to you before disappearing while the Highland tribe, whose finishing block is a telephone box, actually staggers past before falling backwards into it in a drunken stupor. Stereotypical and not overly politically correct perhaps, but it brought a smile to my face, and it is attention to small details such as this which helps to make Lemmings 2 such a good game.

### Conclusion

Lemmings 2 is one of those rare phenomena. Playable, highly addictive and with no obvious faults or down sides at all throughout its total of 120 levels. The game design is a gem and the conversion has been carried out with all the skill and care we have come to expect from Krisalis. If you only have 1Mb of memory and have not been able to justify upgrading, this game is reason enough. A

# Cars – Maths in Motion

## George Barnett

'Cars Maths in Motion' is simulation program (not a game) that is based on a season of Formula 1 Grand Prix motor racing. It is an educational program which covers an understanding of percentages, multiplication, division, simple geometry, scale drawing, modelling, probability, ratios, strategy and logical thinking. The program is suited to individuals or group work and cars have to be adjusted to compete on the chosen circuit. There are many available circuits and teams have to make decisions based on a combination of information presented to them and their own skills in measuring, estimation and calculation.

The teams compete in an attempt to achieve the fastest practice lap time to obtain the pole position at the start of the race. The task then is to develop a winning strategy! Fuel loading, tyre types, pit stops and weather forecasts will all come into play when making decisions.

### Tutorial

There is an excellent tutorial that pupils may use on the Silverstone racetrack. There are six files set up on the 'Teams' directory: 'Stewards Information' showing the race venue, distance, and weather information (dry weather requires fast dry tyres), 'Drivers Temperament' (what sort of driver are you?), 'Workshop Adjustments', 'Pit Team Briefing', 'Race Planning' and 'Grid Position'. The information must then be saved and the race started.

The climax (or anti-climax depending on your expectations) is the race itself. It is at this point that the teams find out whether their strategies were successful or not. There is no roar of engines though and no movement of cars, only records of times or incidents. All the pupils who tried this program were disappointed at this stage. Flying simulations have aeroplanes and, of course, some action was expected. However, by persevering, most pupils became interested in the Silverstone Report which appears at the end of the race, e.g. Weather, warm and dry. Lap 1, Ian overtakes Wendy. Lap 2, Ian spins car but recovers. Lap 3 Ian crashes car. Finally Kevin wins at an average speed of 205 km/h. This, of course, shows only brief excerpts of the report but it was of great interest to the pupils taking part.

### Running the program

The program disc has to be initialised but then the three discs may be loaded onto a hard disc. By clicking on the !Cars icon, the icon appears on the iconbar and if you do not wish to study the well-presented manual, you can simply follow the tutorial.

### Creating a race scenario

Before being able to set up a race, a circuit has to be selected from the 21 supplied and provision has

been made for a degree of security for teachers, to prevent pupils tampering with the Setup. Clicking <menu> on the Cars icon produces, amongst others, 'Start Race' and the Setup Page. This has a sub-menu showing Start Time, Lap Details, Circuit Details, Weather Forecast and Save Setup. The Setup has to be saved before the race can be run.

In setting up the car, the circuit plans have to be studied. There are six types of features to be considered: short, medium and long straights, tight, medium and long bends. Each feature type is defined on every Circuit Plan, creating different mathematical situations. The angles have to be measured (by a protractor). The race distance and safe speed have to be calculated, as has the required quantity of fuel, and the necessary pit stop times have to be forecast. There are helpful tips for the classroom covering these features printed in the manual, as well as Travel and History suggestions. Listed too, in Appendix 3, is program-related classwork in Maths, Science, Art, Social Skills, Life Skills, Language, Design and Technology and car problems.

As the race progresses, incident reports appear on the screen (as mentioned in the tutorial above) and if a 'Journalist' option is set, the race is paused to allow time for notes to be taken. There are facilities to construct your own circuit.

**Conclusion**

The 23-page manual, 21 circuits and three discs are housed in a strong box and I consider that this is a worthwhile educational program, reasonably priced at £49.95 +VAT from Cambridgeshire Software House. A

# Vanguard Graphics – Cowboys and Indians

## George Barnett

This consists of over a hundred examples of Cowboys and Indians coloured clipart that can be used in cartoons or whole comic books. No drawing ability is required – just a vivid imagination and a lot of time. A 'Wild West' font is also included.

There are two filled discs of drawfiles and the twenty wild west scenes that can be ungrouped so that individual parts can be used separately. There are 'effects' available, such as POW! WHOOSH! ZOOM and various shaped speaking bubbles into which 'cowboy talk' can be typed.

The ten-page pamphlet that comes with it shows each item of clipart and gives suggestions for creative writing, colouring books and National Curriculum areas.

I can thorougly recommend this clipart library – at £15 + £2 p&p (that's less than 17p a picture!) from Matt Black, it's worth every penny. A

# Impression Style Resource Disc

## Gabriel Swords

DEC_dATA have produced a useful disc of clipart and borders. There are six files on the disc including... borders, masks, decorative and office clipart, chess pieces, and a UK map.

The clipart isn't the best part of the disc – in fact, among the last four files, you'll only find 26 drawfiles, and thirteen of those are chess pieces.

The borders on the other hand are much more useful. You can choose from arrows, round and square corners, celebrations, fancy, jumbo, plain and top borders – 110 in all. Even amongst the plain borders, you'll find all the lines you always meant to create but never got around to doing – dotted, 2mm, 5mm, ½pt etc.

In with the celebration and fancy border files, you'll find, among other things, a football, a collection flowers, pins, screws, taped corners, a Christmas tree, holly, balloons, a horseshoe, a fish and a cross.

If you have a copy of Impression Style, you can also access some help files. These give you some ideas about how to use the clipart and the borders and

shows you how to create drop caps and text run-around.

Although the collection is called an Impression Style Resources disc, you don't have to have Style to use the drawfiles and borders, but you do if you want to look at the help files.

Impression Style Resource Disc costs £7.95 +VAT from DEC-dATA. A

# Molecular Modelling Update

## Dave Kent

Just over a year ago, in Archive 6.4, I reviewed two pieces of molecular modelling software, one from Arachne and the other from SSERC. In February of this year, I was given the opportunity to look at updated versions of both pieces of software. The new versions are SSERC Version 3.3 and Arachne Version 3.72. Both modellers have been improved in a number of ways.

### SSERC's ChemMod

The main improvements with the SSERC modeller is that it is now fully mouse-controlled and can save a number of types of structure as drawfiles and the manual is more user friendly. Ball and stick and coloured line structures can be saved as drawfiles. There are also a number of molecule discs now available (at £10 +VAT). These appear to be compilations of molecules sent in by users and so have a rather random feel. However, there are a large number of simple and complex molecules available. The manual now comes in a ring binder with each page in a plastic wallet. The menu system and overall feel of the program is unchanged – it still reflects its origins in the PC world. The upgrading cost is £10 +VAT – a very reasonable price given the improvements and the fact that the upgrade contains the first of the extra molecule discs.

### Arachne's Modeller

The manual and tutorial are now both A5 booklets. The package includes a pair of red/green specs for viewing the 3D options and there is also a keystrip. Several discs of molecules are available, each disc covering a specific area; organic, crystals and lattices and biochemistry. A disc with a selection from the others is also available. This modeller has undergone a greater number of changes – but then perhaps it needed to do so to overcome its major problem of producing incorrect molecular shapes for some less simple molecules.

The program algorithms for determining shape obviously have limitations because the program still has similar problems with molecules like cyclohexane. However, the author has introduced a number of tools and options that attempt to solve this shortcoming.

There is an option to allow the program to use the correct bond angles and lengths at the bond-making step. This results in the atoms jumping to new positions on the screen as they are bonded. You need to keep track of what is what but it is very effective for linear and branched molecules. However, it will not work for the ring-joining step of cyclic molecules. This is a pity because it would be nice to show that the final molecular shapes arise from repulsions between electron pairs in the molecules.

There is an excellent line editor/parser which generates molecules from their formulae! Typing 'CH4' generates methane, whilst CH3CH2CH2CH=CH2 instantly produces a model of pentene. Alkynes can be formed using # to represent the triple bond. Various fragments can be included using two letter codes. For example, you only have to type CH3CHPhCH2CHPhCH2CHPhCH3 to produce a model of the backbone of a polystyrene molecule with three phenyl side groups. PhCx produces benzoic acid. The resultant molecules needs a bit of twiddling to get the conformation as you want it to be, but this is a very powerful feature of the program. It speeds up and simplifies the production of large molecules enormously. In fact, it forms a method of incorporating accurate cyclohexane molecules – the chair and the boat form are both offered as fragments!

A number of new tools have been added and others improved to set bond angles angles and bond lengths. These are fairly straightforward to use so that fine-tuning molecular shapes is fairly easy. Dot

surfaces have been added to the display types. The display quality has been improved and the author has promised a ray-traced rendering tool in a future upgrade. Animations can now be saved to disc, with the option of using Acorn's Squash module.

### Conclusion

The Arachne modeller has been greatly improved; it still has the better selection of drawfile options and is very easy to use. Its inability to calculate cycloalkane structures correctly is perhaps more a comment on the difficulty of this task than on the modeller.

Last year, I suggested that buying both of these programs would not break the bank and would provide an excellent set of molecular modelling tools. The improvements to each program reinforces this view. Both are excellent, robust and useful programs; they complement each other and can be highly recommended. A

# Optical OCR

## Peter Jennings

Optical Character Recognition (OCR) programs, which convert images of text saved as sprites into editable words, are such complex programs that they have been appearing on the market well short of being fully developed.

The standard for OCR on Acorn machines was set last year by Risc Developments' Sleuth (Archive 7.1 p53). A contender quickly followed when the first versions of Optical and Optical Professional appeared on the Neurotron Software stand at Acorn World, with the ability to be user-trained to recognise new fonts.

These first versions lacked some of the intended features but, after another five months' more of intensive work, they have been added and the "completed" version 2.16 of Optical Professional was issued at the end of March.

Optical Professional costs £119 + £2 p&p while the budget version, Optical, which has fewer features but can be upgraded, is £59 + £2 (with no VAT to pay on either price). It comes in a smart black plastic video-style case, containing two colour-coded discs and a 34-page well-illustrated manual with an extra seven pages of updates. The manual is not very well ordered, some of the instructions could be clearer and an index would have been useful.

The program disc is encoded with a registration number and has to be initialised with the owner's name before it can be used. It can then be copied onto hard disc and backed-up. Registered users are notified of significant upgrades and can return the program disc for a free exchange.

It must always be borne in mind that no OCR program can produce good results unless it is working from a well-scanned sprite made from a well-printed original. Three sample sprites of scans are provided and, on the basis that these examples should be the best quality obtainable, I tried them out before attempting to convert any scans of my own.

> Conversion tests Optical Professional produced the following output. The original text, which ends in mid sentence, has 573 characters.
>
> There are two ways of placing these icons on the ruler. * Cliching on one ol the icons Rghlights it. Then, clicking on the qraduate4 scale causes the icon to appear at that Position on the ruler. TAs mainly applies to tabs, since you can have up to 32 tabs on the ruler at once. With xsargins, you can only haoe one ol each type on the ruler, so clicking with a margin highlighted mooes the margin to the new Position. R further restricron is that you are not allowed to place the right margin to the left ol either the return nsar$$n or the left margin [and oice versa). Thus, the mar$$n IVll not appear when you are cliching in an illegal Place. * The icons can also be dragged, either from thep current

Thirty-two characters were wrongly reproduced, making an accuracy of 94.4%. The time taken was 55 seconds. Optical Professional incorporates an intelligent spelling checker which can be used to make corrections either under user control or automatically. The above output text was next auto spell checked.

> There are two ways of placing these icons on the ruler. * Clicking on one of the icons Daylights it. Then, clicking on the graduated scale causes the icon to appear at that Position on the ruler. TAr mainly applies to tabs, since you can have up to 32 tabs on the ruler at once. With charging, you

can only have one of each type on the ruler, so clicking with a margin highlighted moves the margin to the new Position. A further restricted is that you are not allowed to place the right margin to the left of either the return coarsen or the left margin [and vice vernal. Thus, the margin Ill not appear when you are clicking in an illegal Place. * The icons can also be dragged, either from thee current

Spell checking added some errors of its own but reduced the total to 26, improving accuracy to 95.4%. Inevitably, Optical has to be compared with Risc Development's Sleuth and, even though this does not have a spelling checker, the output from the same sprite file was markedly better, although it took three times longer to process.

There are two ways of placing these icons on Ihe ruler. Clicking on one of the icons highlights it. Then, clicking on the graduated scale causes the icon to appear at that position on the ruler. This mainly applies to tabs, since you can have up to 32 tabs on the ruler at once. With margins, you can only have one of each type on the ruler, so clicking with a margin highlighted moves the margin to the new position. A further restricHon is that you are not allowed to place the right margin to the left of either the return margin or the left margin (and vice versa). Thus, the margin will not appear when you are clicking in an illegal place. 'The icons can also be dragged, either from their current

The Sleuth output had five characters wrongly interpreted, making an accuracy of 99.1 per cent. The time taken was three minutes five seconds.

### Font definer

Optical's most exciting feature is its ability to be taught to recognise new fonts. The powerful tool that makes this possible is the font definer. At its simplest, clicking on a wrongly interpreted character in the output window will show the original in the definer window alongside Optical's guess at what it is. The latter can then be corrected in various ways, including just deleting the guess and typing in the correct character, which is then automatically substituted in the output. ASCII numbers can also be entered. A quicker way to make corrections, or to train the program to recognise a new font, is to open the definer's font-teaching window. This enables corrections to be made by over-typing in the output window and the corrected character is learnt automatically. Another window can be opened to show which characters in that font are now recognised. When completed, the new definitions are saved into the file of recognised fonts.

This is a fast and simple method to add new or corrected definitions for fonts but it has some problems. Sometimes a single letter is split into two characters by the definer and although clicking <select> and <adjust> on the two parts of the letter will usually rejoin them, the definer will not always accept this. There is a ligature splitter which will try to separate joined letters but this does not always prevent two or three closely printed characters being interpreted as a single one. They cannot be separated nor can deletions be made to correct them.

The definer will recognise characters it has already been taught and will make many of the corrections itself as soon as a wrong character appears in its window. It is then rather fascinating to watch text in the output window change as you move the cursor along it. Unfortunately, though, this does not stop many of the errors being repeated if the same sprite is processed again, even though the wrong characters will be recognised as such and immediately corrected by repeated use of the font definer.

### Font teaching

I taught Optical Professional to recognise a number of different fonts and the following examples, from a scan of part of the back page of Archive, are typical of the results.

This is how the text was rendered before the program had been taught to recognise the font.

@yCX!UR @AQAZ!HR GOX2AiXG

Leos Reciews Hits & tips ˜ a ma!Or feature Ahicles for beginners We latest technical ixfonoation Free small ad`s for subscrb6rs Help _ requested and offered Tomments from readers

@ACKX!GA) MA)Q @Ayy!GA

A telephone hot.Line semice for immediate help with your technical problems. Any member can sexd wri#en e^qu&'es, but for a fast resoo^se. *se rhe T.H.5. Ar fts oer rear.

Using the font definer's font teaching facility, the output was corrected as follows. The errors still remaining are where two or three letters have been read as a single character and could not be corrected.

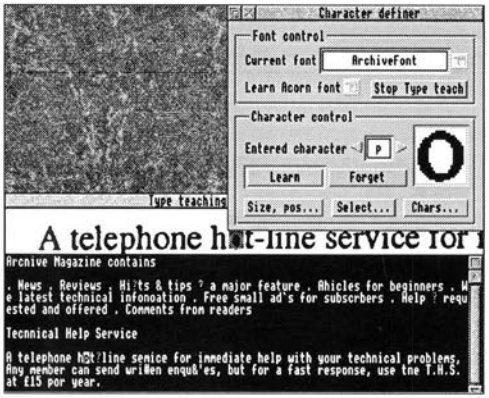
Archive Magazine contains

• News • Reviews • Hints & tips – a major feature • Ahicles for beginners • We latest technical infonoation • Free small

ad's for subscrbers • Help – requested and offered • Comments from readers

Technical Help Service

A telephone hot-line semice for immediate help with your technical problems. Any member can send wri#en enqu&'es, but for a fast response, use the T.H.S. at £15 per year.


Character definer
Font control
Current font
ArchiveFont
Learn Acorn font
Stop Type teach
Character control
Entered character
p
Learn
Forget
Size, pos...
Select...
Chars...
A telephone hot-line service for
Arcnive Magazine contains
. News . Reviews . Hi?ts & tips ? a major feature . Ahicles for beginners . W
e latest technical infonoation . Free small ad's for subscrbers . Help ? requ
ested and offered . Comments from readers
Tecnnical Help Service
A telephone h?t?line semice for inmediate help with your technical problems,
Any member can send wri#en enqu&'es, but for a fast response, use tne T.H.S.
at £15 por year.

After saving the font definitions, the same sprite was reprocessed with the following results. Some of the errors have been repeated.

Archive @agazine contains

. News • Reviews • Hits & tips - a major feature • Ahicles for beginners • We latest technical infonoation • Free small ad's for subscRbers • Help - requested and offered • Comments from readers

Technical Help Service

A telephone hot-line semice for immediate help with your technical problems, Any member can send wri#en enqu &'es, but for a fast response, use tne T.H.S. at £15 per year.

Twenty-one of the 350 characters were wrongly interpreted (including hyphens for dashes), making an accuracy of 94 per cent. This rate does, of course, vary with the quality of the original.

Optical Professional is designed to work directly from the output of various scanners, including the Computer Concepts and Watford ranges. I could not, however, get Optical to accept the scans made directly from my Scanlight 256 hand scanner and Neurotron are looking into this, but Dave Walsh of Herne Bay has reported successfully using a Watford scanner.

The Professional version can also append text from more than one scan, which is useful when using small hand scanners, and it can cope with multiple columns of text and multi-coloured pages. Various speech synthesizers can be used with it to read the output aloud.

### Conclusions

Optical Professional, which has the avowed aim of becoming better than PC programs costing well over £600, still has some shortcomings. It is less accurate than Sleuth although much faster and with the advantage of being user-trainable to recognise new fonts. It can still make mistakes with characters it has already learnt. Despite the imperfections, a 95 per cent character recognition rate is impressive at the present stage of OCR development. Also, improvements to Optical come free but upgrades to Sleuth, which has a price advantage (£10 +VAT) at the moment, are to cost extra. Both programs are still being developed and the fight for supremacy between them will be an interesting one to watch. A

# Advantage

## George Barnett

Longman Logotron have specifically designed and produced this spreadsheet for use in schools. A budget price Advantage may provide the answer for users who want pupils to use a modern spreadsheet.

Students will find that Advantage offers a wide range of intuitive and easy to use functions, including the following:

**Point and click** – Users can drive the software just by using the button bar at the top of the sheet.

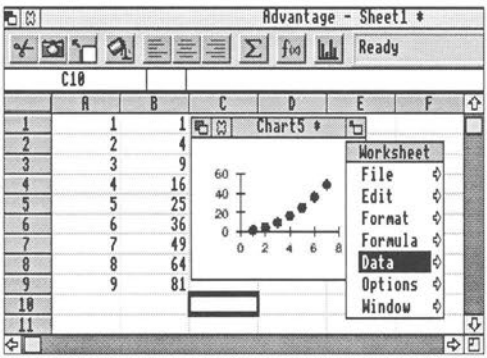
**Creating a formula** – Simply type =, enter the function, point and click at the cells or drag across the cell ranges you want to use.

**Print-to-fit** – Allows Advantage to do the work of fitting the sheet onto one page, whatever the size.

**Charting** – Display data using a choice of graphs (Pie, Area, Column, Line and Scatter).

## The package

The software comes as one unprotected disc (with copyright warnings). The disc is full and contains nine tutorial worksheets, five charts, a key strip as well as the Advantage program. An A4-size manual of approximately 100 pages is a well presented booklet containing comprehensive instructions on getting started. The tutorial consists of seventeen pages starting with 'What is a spreadsheet?' and covers the use of formulae, graphs and functions for saving and loading. The software installs on the iconbar in the usual way and a click on the icon produces the default spreadsheet complete with the button bar on top of the sheet.




## Getting started

The requirements are version 2 or later of RISC OS (version 3.10 or later is recommended), at least 2Mb of RAM, a printer driver, the Advantage program disc, a system disc containing !System, any frequently used applications and a work disc to contain the Advantage files.

When Advantage is loaded, a blank spreadsheet is displayed, complete with a grid of rows and cells numbered and labelled and with the title Sheet 1. The complete worksheet contains 16,384 rows and 256 columns with the normal labelling. Only a small part of the sheet is displayed at any time but scroll bars may be used to reveal all.

## The control window

The status bar shows what operation is in progress: Enter, Edit, Copy, Point, etc. If no operation is in progress, it displays Ready. The Tool (Button) bar has cut, copy, paste, fill cells with data, realign data left, centre, or right in the selected cells. There is a button which makes an intelligent guess at the cells needed to be added. Another is used to display a menu of frequently used functions and finally a button which opens a chart window to display the selected data in chart form. The charts available are Area, Bar, Column, Line, Pie and Scatter. Titles may be added to charts. Curiously, the Adjust size icon is not displayed but a pointer placed in the absent position with <select> depressed will size the window.

## General

The manual provides eight pages on the use of formulae and Advantage provides around 100 functions for use to build formulae. The facility to automatically use a repeated formula by highlighting columns or rows and clicking on the Fill button is quite impressive. There are four fonts supplied with the usual variations but 256 fonts could be used in a single worksheet should it be necessary.

Row height and column width can be changed easily with the mouse by moving the cursor onto the row or column labels then dragging, the gridlines may be moved as required.

There are 21 built-in formats which cannot be deleted or changed. These are selected from a menu displayed when required. For example, by selecting one particular built-in format, on entering 1250, £1250 would be displayed.

Printing worksheets or charts could not be simpler with the normal facilities for Page Setup, Orientation, Headers, Footers, and Scaling output.

Advantage worksheets can be saved and loaded as normal files, drawfiles, CSV (Comma Separated Values) or SID (Software Independent Data format) files.

## Conclusion

Advantage is a user-friendly spreadsheet, well documented (although I would have preferred an A5 format) and inexpensive. The price is £49 +VAT from Longman Logotron for a single user version (£55 through Archive). The primary school site licence pack is £120 +VAT (£132 through Archive) and the secondary school licence is £190 +VAT (£207 through Archive). A

# Bible Software for Acorn Computers

**Colin Randall**

Do you get fed up with running 'BibleMaster' using the PC Emulator? The emulator is both slow and memory-consuming. In BibleMaster, saving passages for use in DTP is quite a fiddle. But what can we do apart from lobbying Hodder & Stoughton to produce Bible software for use on Acorn computers?

I have found a partial solution. The main things I want to be able to do with Bible Software are:

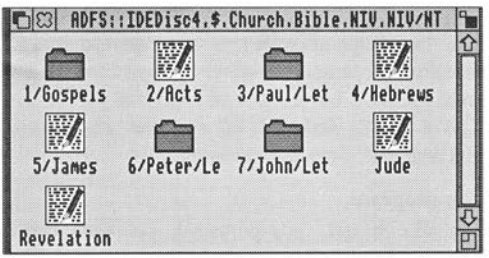
1) Call up a passage quickly

2) 'Cut and paste' passages into DTP documents

3) Do word and phrase counts and searches

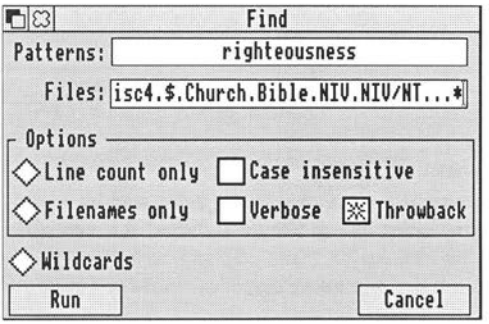
4) Save such lists.

I can now do all this wholly within the Acorn environment, and the process is simplicity itself, although time-consuming to set up initially.

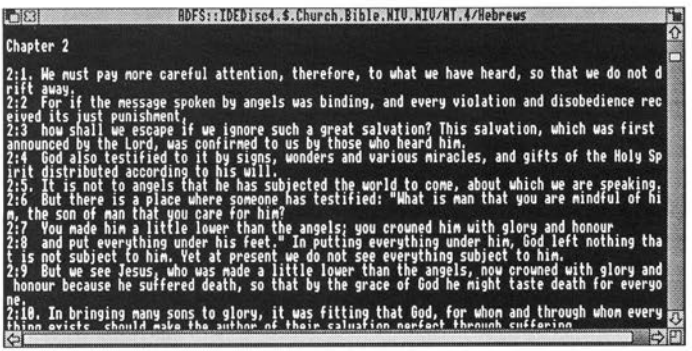



What I use is Risc Developments' DeskEdit which comes with Acorn's 'Find' utility. First of all, the separate books of the Bible (in NIV) were saved as separate DOS text files and then changed to Edit files (using DeskEdit). These were then put into directories (as the NT directory above) so as to allow searches to take place following the Biblical order of books. Each book was then edited so that each line gave chapter and verse reference (see below) – this is important for searches. This is the long part.

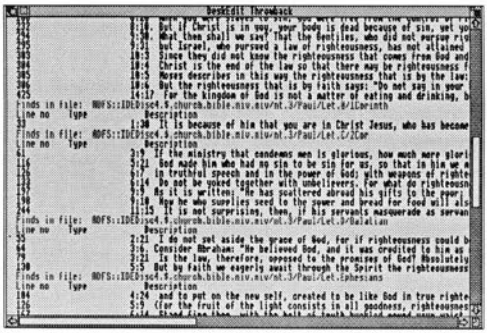
Using these text files is simplicity itself. Different passages can be displayed on screen at the same time because DeskEdit allows multiple windows within the same text file. To cut and paste, it is simply a matter of highlighting a section and and dropping the resulting text file into Impression (or any other DTP program). A simple search facility is provided with DeskEdit (indeed even with Edit), but this only finds the first occurrence of a word or phrase. However, Acorn's 'Find' utility comes free with DeskEdit (see below) and is very powerful.




All uses of a word or phrase will be displayed (see below) and the list itself can be saved as a text file. Moreover, if DeskEdit's 'Throwback' facility is used, clicking on one line in the list will call up the text file and open it at the right place. 'Find' can be used to go through the whole Bible or just a single book. It is not fast (I use it on an A4000), but quite adequate, and is not limited by the size of any directory loaded


ADFS::IDEDisc4.$.Church.Bible.NIV.NIV/NT.4/Hebrews
Chapter 2
2:1. We must pay more careful attention, therefore, to what we have heard, so that we do not d
rift away.
2:2 For if the message spoken by angels was binding, and every violation and disobedience rec
eived its just punishment,
2:3 how shall we escape if we ignore such a great salvation? This salvation, which was first
announced by the Lord, was confirmed to us by those who heard him.
2:4 God also testified to it by signs, wonders and various miracles, and gifts of the Holy Sp
irit distributed according to his will.
2:5. It is not to angels that he has subjected the world to come, about which we are speaking.
2:6 But there is a place where someone has testified: "What is man that you are mindful of hi
m, the son of man that you care for him?
2:7 You made him a little lower than the angels; you crowned him with glory and honour
2:8 and put everything under his feet." In putting everything under him, God left nothing tha
t is not subject to him. Yet at present we do not see everything subject to him.
2:9 But we see Jesus, who was made a little lower than the angels, now crowned with glory and
honour because he suffered death, so that by the grace of God he might taste death for everyo
ne.
2:10. In bringing many sons to glory, it was fitting that God, for whom and through whom every

for searching. It would be quite possible to drop a file containing several different versions of the Bible into 'Find', and it would merrily work its way through them. It can also cope with wildcards.




If anyone would like to help me edit text files by putting chapter and verse references at the start of each line, please contact me and we can pool our work. The same processes can also be used with hymns and liturgies and I am slowly building up collections.

Please also contact me if you would be interested in forming a Christian Acorn User Group, for sharing experiences, discoveries and ideas, perhaps via a simple newsletter.

Rev. Colin Randall, The Rectory, Swan Lane, Long Hanborough, Witney, Oxon. OX8 8BT (0993-881270).

(DeskEdit3 retails at £27.19 + VAT from Risc Developments or £30 through Archive.) A

# Larger – The Virtual Desktop

## Dave Wilcox

Larger is a piece of software being sold by a company called 'Warm Silence Software' at a mere £10. This includes VAT and p&p and, at the Company's discretion, free future upgrades – not a bad start.

The version received for review is 2.05 but WSS are currently working on version 2.06. There appear to be frequent modifications to the software, mainly based on requests made by users.

### The package

The program comes on one 3½" floppy disc accompanied by Sparkplug from David Pilling (PD de-archive utility), and two 'sparked' directories – 'Backdrops' and 'Manual'. There is no fancy packaging, no printed manual, just the disc and a covering letter from the company. What a refreshing change – you are paying for the software. I know one other person who works on these lines – he is also mentioned above!

### The manual and backdrops

The sparked file called 'manual' contains files in Impression, Draw and Easiwriter formats. Future versions are hoped to include Ovation, PipeDream and Wordz versions, if required. I used the Impression manual and printed out 25 sheets of A4. The manual is well thought out and is laid out very professionally. It is clear, concise and easy to follow – a pleasure to read. Larger was soon loaded onto my machine configured and up and running.

The backdrops directory is self-explanatory and contains four sample backdrops designed for WSS – great for WSS but a waste of space for you or me. This would be better left off or a few general samples included.

### The program

The disc is not copy-protected, but each has a unique serial number registered to the owner. The application can be transferred to hard disc by dragging, this being the preferred environment for use of the program. Loading the application requires the usual double-click, with the application appearing on the iconbar, but this is configurable to load on the bar or not. Even if no iconbar icon is selected, the application menu is obtainable from any area of the backdrop. Once Larger is loaded, your desktop takes on a new dimension – instead of being the size of your screen, the backdrop can now be up to a million times bigger.

Items you now select to be dropped onto the backdrop can be configured via the application menu option to appear on 3D slabs textured in a similar way to the Acorn Newlook pattern, or like the usual pinboard with icons and application names. Appli-

cations can have their names shown or just their icons. When a selection is made, you can choose to have inverted icons and/or depressed slabs.

The main option is for the organisation of 'pins' applied to the backdrop. There are 'gravity' options of left, right, up and down, or none, for Applications, Directories, Backdrops and Iconised sprites. This gives you a neat backdrop by just dragging and letting go. Alternatively, by selecting 'none', you have the versatility to arrange your own layout. All sprites are grid-locked for the sake of neatness.

If directories are loaded on the backdrop, you have the further options to either open the filer window and/or set the directory as the CSD. The usual filer operations can also be applied – access, copy, rename, etc, but you also have extra facilities. Any files dragged onto them can be saved or auto-started, the parent directory can be opened, or hot-key options can be applied as per settings within the config file.

The virtual desktop section allows you to set the way you are able to move around this extra large desk space. The best way I found was the default selection of holding <shift> and moving the mouse to the position required. Backdrop sprite control is also configurable from this menu, giving the usual centred, tiled or scaled options, and automatic path inclusion by dragging and dropping your backdrop sprite to the window having the text input focus. Hot-key selection is defined within this menu for the frequently used options of Larger if required. Another option available is the selection of desktop focus as either 'click to type' or 'focus with pointer'. I found this best left on the 'click to type' option, as the cursor then stays where you left it, especially useful in Impression documents.

The nicest aspect of this program is the possibility of having many different backdrop configurations saved on the main backdrop. A simple double-click on the required backdrop selects it and changes your pinboard to the new selected topic. A double-click with <adjust> on the blank background takes you back to the main backdrop. This allows you to configure different pins for different tasks, e.g. DTP, Comms, Graphics, etc and thereby avoid the clutter of a large number of 'pins'.

Once you have configured your backdrops and sub-backdrops, it is necessary to save the icons used within Larger in order that the correct sprites are applied to the correct slabs. It is also necessary to save the backdrop settings – both are easily done from the main menu. On my set-up, I lost a sprite from the ArcFax printer when the system was re-booted. This is not really a problem – you either save the relevant sprite into Larger's internal sprite pool or you include a filer-boot line in your boot file. This latter method I found to be best. If you modify your backdrop, you need to resave both backdrop and a new sprites file – saving the new sprites file will erase your included sprite.

All of the configuring completed, you now come to the use of the larger backdrop allowing you to have numerous windows open, memory permitting. If you have a desktop area for graphics, for instance, you can load your application(s) and open their windows. Then you can load your DTP application(s), open a window and, whilst holding down <shift>, move the window off the screen until a clear backdrop is found and use the DTP here. (Pins remain visible regardless of screen movement.)

If you wish to return to the graphics area, either move back the same way or use the map option. This is a graphical display of the whole backdrop and simply clicking on the desired location brings this to the centre of the screen. If you want all windows back on the work-screen, a retrieve option is available.

There is a user-defined menu section for installation of your own most used commands. Examples are given ready installed on this menu option, and programming your own items is relatively simple – the manual contains examples to help.

## Conclusion

This has got to be easily the best piece of software of its kind available at present. Although there are several PD programs available, which work along similar lines, they fall well short of this program. Larger is highly recommended.

Warm Silence Software can be contacted on 0865-54382 or by snail mail at St. Catharine's College, Manor Road, Oxford, OX1 3UJ. A

# Music Box

**Paul Cross**

Music Box from Topologika comes in a colourful, if flimsy, box and the programs are on two discs – a program disc and a resources disc. In the single user version, the program disc is a key disc which must be in the drive when you run the software. (There must be a better way of protecting software than this. If you use a hard disc, as many people do, you have to search for the key disc every time you want to start the program – most inconvenient!)

To complement the discs, there are a number of booklets and some printed photocopiable sheets, plus the obligatory 'justification of use sheet', all about how suitable the program is for use with the National Curriculum. The cost of all this £38 if you buy it from Archive.

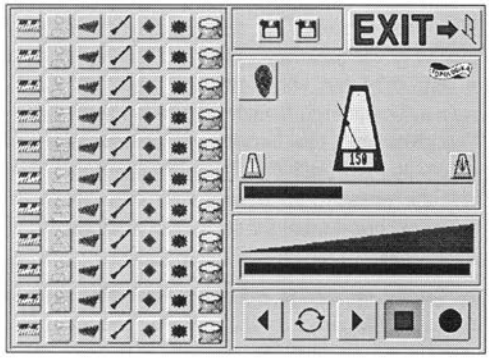
### What does it do?

After you have loaded the Music Box program, (a little tedious if you load it from floppy disc as it requires some disc swapping), a little blue box with the word 'music' written on it will appear on the iconbar and it opens to let musical notes out when the program is active. On the screen will be a menu, in the form of four pictures showing the four parts to the program. It is obvious that the program is designed for use in schools. In fact, it is designed for younger children working towards Key Stage 1, (AT1) Performing and Composing and (AT2) Listening and Appraising. It will also be useful for children working towards towards Key Stage 2 who lack musical experience or as a precursor to using 'proper' music notation.

### The menu

The four parts of Music Box are, Sound Box, Chord Box, Beat Box and Tune Box.

If you click on an icon, the screen will fill with a collection of items to enable you to make and record music. There are a number of items common to all screens: a 'tape recorder' to record your music-making, a variable metronome to keep you in time, a volume control, save and load facilities and the exit to leave the program and return to the main menu.




### Using the program

The main theme of the programs is that you should experiment with sounds and patterns. The programs need an input from an adult to direct and keep the children on target otherwise they will play without much point to their activity. When I first used the program, I tried it with a group of children who lacked musical experience, I was unsure of its usefulness. However, when I tried it with a group who played instruments and had some understanding of music they were more purposeful and soon constructed interesting sound patterns.

The program grows on you and you have to allow time for experimentation and direct the children to the next stage of work – some playing is important. All the groups of children who used the program, whether they made a 'tune' or not, clearly enjoyed the activity.

### The resources disc

This disc contains a number of files to supplement the main program, but the main one is !MBInsts. This contains 35 additional instruments which you can use to replace the seven set by the program. Each of the sounds is stored as a sound module and has its own natty little icon. You can use your own sound modules and icons if you wish.

There are also sample tunes, chords and rhythms (beats) stored in !MBFiles and this is the place you can save your own creations.

Additional resources include drawfiles to print out blank CHORDS and STAVES record sheets.

These are useful to allow children to record their musical creations, and to aid their work towards 'real' notation.

### Conclusions

This is one of those programs that needs 'to be given a chance'. As a non-musician, I found it useful as it helps me teach elements of National Curriculum music that I find difficult. The children enjoyed using it. The groups that had two chances of working with the program produced tunes and rhythms quickly and tunefully. Finally, the quality of the music can be improved by playing it through an external amplifier or by using headphones and the latter allows the rest of the class to concentrate on their work until it is their turn to use the program. A

# Celtic Designs and Church Year Clipart

## Peter Jennings

If you do any sort of desk top publishing, you can never have too much clipart. Public domain libraries are the best sources for buying the more general subjects cheaply but it is always a pleasure to find more specialised topics when you need them. Two of these now available are Celtic Designs, from Glyn Howells, at £10.99 (no VAT) and The Church Year, Parish Magazine clipart set, from DEC_ dATA, at £7.95 +VAT. Both come on single unprotected discs and have similar copyright notices saying they can be used for printing in DTP and other applications but permission must be obtained for commercial use.

### Celtic patterns

The Celtic Designs disc has 33 black and white drawfiles of borders, chains, motifs and panels which can be combined in various ways to create other patterns. Some of the borders are designed to be used in Impression. There is also an instructional drawfile showing how the designs can be manipulated by changing the thickness of the lines and using colours for lines and fills.

The collection comprises nine borders, rectangular, round and oval, plus three Impression borders; ten chains, vertical and horizontal; seven motifs, mostly knot designs, and four panels.

The file names are uninformatively numbered, such as "Border1", "rhaff1" (a chain) so it would have been useful to have had a printout showing them. One may be included in future† but, in the meantime, to make the best use of this collection, it is worth getting a graphics cataloguing program, such as the public domain PickAPic (Shareware 45), if you do not already have one.

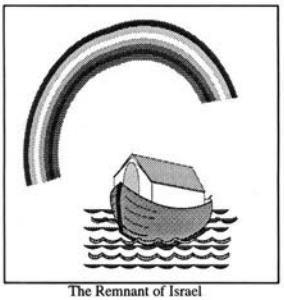
The designs are based on Celtic originals, rather than being precisely copied from them. Despite this, it could be a useful collection for appropriate projects in history and art although its main intention is simply to provide decorative motifs for general use. It may seem a little expensive for non-specialised purposes, compared with PD discs, but the designs are intricate and attractive and can be used for unusual and strikingly effective decoration.

A second disc is in preparation if there proves to be a demand for it.

*(†We have recently received a copy of a printed directory that now comes with the clipart so that you can see what the designs look like before loading the files. Ed.)*

### Church symbols

The Church Year is aimed directly at very specialised users. Anyone expecting colourful Biblical scenes, suitable perhaps for Easter and Christmas cards, will be disappointed. There are 105 symbolic designs, supplied as black and white drawfiles, to illustrate themes from the Church of England's Alternative Service Book throughout the year. Some

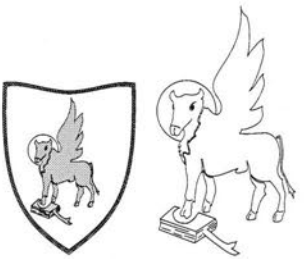


The Remnant of Israel

are traditional symbols for the theme and others are based on the contents of the lessons set for the day.

The drawings have a simple, rather old-fashioned, look that borders on folk art. They are mainly suitable for use as "thumbnail" illustrations and there is a note that many are best printed in 2.5cm (1 inch) squares. The files are numbered, not named, but all the images have printed captions. They are catalogued, in a text file, with a list of holy days and festivals throughout the year (Good Friday, the 9th Sunday before Christmas, the 4th Sunday in Lent, and so on), the days' themes and the numbers of the files which illustrate them. This makes it easy to find the symbol needed for any occasion.

This collection is clearly labelled for parish magazines and it provides an inexpensive selection of small illustrations for them and possibly for other Church purposes, such as text cards and hymn sheets, but the designs are rather esoteric and there are few that would be of more general use. **A**



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# Fact-File

**(The numbers in *italic* are fax numbers)**

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| 4th Dimension | P.O. Box 4444, Sheffield. (0742-700661) *(0742-781091)* |
| 4Mation | 14 Castle Park Road, Whiddon Valley, Barnstaple, Devon, EX32 8PA. (0271-25353) *(0271-22974)* |
| Abacus Training | 29 Okus Grove, Upper Stratton, Swindon, Wilts, SN2 6QA. |
| Acorn Computers Ltd | Acorn House, Vision Park, Histon, Cambridge, CB4 4AE. (0223-254254) *(0223-254262)* |
| Aleph One Ltd | The Old Courthouse, Bottisham, Cambridge, CB5 9BA. (0223-811679) *(0223-812713)* |
| Anglia Television | Education Department, Anglia House, Norwich, NR1 3JG. (0603-615151) *(0603-631032)* |
| Arachne Software | Orchard Cottage, East Morden, Wareham, Dorset, BH20 7DL. |
| Beebug Ltd | 117 Hatfield Road, St Albans, Herts, AL1 4JS. (0727-840303) *(0727-860263)* |
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| Colton Software (p10) | 2 Signet Court, Swanns Road, Cambridge, CB5 8LA. (0223-311881) *(0223-312010)* |
| Computer Concepts (pp21/22) | Gaddesden Place, Hemel Hempstead, Herts, HP2 6EX. (0442-63933) *(0442-231632)* |
| Cumana Ltd | Pines Trading Estate, Broad Street, Guilford, GU3 3BH. (0483-503121) *(0483-503326)* |
| CWDE Software | 1 Catton Street, London WC1A 4AB. (071-831-3844) *(071-831-1746)* |
| Dalriada Data Technology (p15) | 145 Albion Street, Kenilworth, Warkwickshire, CV8 2FY. (0926-53901) |

| | |
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| David Pilling | P.O.Box 22, Thornton Cleveleys, Blackpool, FY5 1LR. |
| DEC_dATA | P.O.Box 97, Exeter, EX4 4YA. (0392-221702) |
| Design Concept | 30 South Oswald Road, Edinburgh, EH9 2HG. (031-668-2000) |
| Digital Arts | 231 Northborough Road, Norbury, London SW16 4TU. (081-679-7307) *(081-764-7898)* |
| GamesWare | Unit 26, The Bartletts, Hamble, Hants., SO35 5RP. (0703–456523) (or 0243-531194) *(0703–456523)* |
| Glyn Howells | Sicar Uchaf, Brongest, Newcastle Emlyn, Dyfed, SA38 9ET. |
| HCCS Ltd | 575-583 Durham Road, Gateshead, NE9 5JJ. (091-487-0760) *(091-491-0431)* |
| Integrex Systems Ltd | Church Gresley, Swadlincote, Derbyshire, DE11 9PT. (0283-550880) *(0283-552028)* |
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| Quantum Software | 35 Pinewood Park, Deans, Livingston, EH54 8NN. (0506-411162 after 6pm) |
| RESOURCE | 51 High Street, Kegworth, Derbyshire, DE74 2DA. (0509-672222) *(0509-672267)* |
| Risc Developments (p33) | 117 Hatfield Road, St Albans, Herts, AL1 4JS. (0727-840303) *(0727-860263)* |
| Sherston Software | Swan Barton, Sherston, Malmesbury, Wilts. SN16 0LH. (0666-840433) *(0666-840048)* |
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| Solent Computer Products Ltd | 2 Mills Lane, Longstanton, Cambridge, CB4 5DG. (0954-789701) *(0954-782186)* |
| Spacetech | 21 West Wools, Portland, Dorset, DT5 2EA. (0305-822753) *(0305-860483)* |
| SSERC | 24 Bernard Terrace, Edinburgh, EH8 9NX. (031-668-4421) |
| The Serial Port | Burcott Manor, Wells, Somerset, BA5 1NH. (0749-670058) *(0749-670809)* |
| T-J Reproductions | Unit D, Canada House, Blackburn Road, West Hampstead, London NW6 1RJ. (071-372-0515) |
| Topologika | P.O. Box 39, Stilton, Peterborough, PE7 3RL. (0733-244682) |
| Warm Silence Software | St Catherine's College, Manor Road, Oxford, OX1 3UJ. (0865-54382) |

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